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EDITED BY

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ART. I.—*On the Topography, Climate, and Diseases of Washington, Texas:* by T. J. HEARD, M. D.

*Editor N. O. Med. and Surg. Journal:*

DEAR SIR:—As it is somewhat uncertain when I shall publish anything on my favorite topic, the Fevers of the South, I have concluded not to withhold from the profession, the many interesting communications I have received, and now offer the following as a contribution to your Journal. To me the paper is particularly interesting, as the facts presented appear to sustain my views of the origin and relationship of Southern endemic fevers. Of this your readers can judge for themselves.

Yours truly,

NEW ORLEANS, *March 31st*, 1856.

E. D. FENNER.

WASHINGTON, TEXAS, *Feb. 8th*, 1856.

DR. E. D. FENNER: Dear Sir:—Dr. E. H. Hubbey told me a few days since, that you wished a paper from me on Yellow Fever. I have seen but little of the disease here; consequently, cannot have much to communicate on that subject as the result of my own observation. But I will give you an outline of my medical observations at this place, and if

Vol. XIII.—No. 1.

you find anything therein of any value to the medical public, you are at liberty to use it as you think proper.

I will in the first place briefly allude to the topography of this town. It is situated in about  $30^{\circ} 20'$  north latitude; 100 miles from the city of Galveston, and about 150 feet above the Gulf of Mexico. It is on the south-west side of the Brazos river, and opposite the junction of the Brazos and the Navasota.

The town is situated on a number of large hills, irregularly arranged, and bluffing up to within 100 yards of the river. The river bank is about 50 feet high above low water mark. The hills are so situated as to permit all refuse to run off, the streets being swept off either on to the beach of red alluvium at the foot of the hills, or into the river. The Brazos bottom is composed mainly of red alluvial loam, abounding in terrestrial testacea, vegetable mould, &c., and varies from three to five miles in width. The river bank on the bluff shores to a depth of fifty feet or more, have identically the same appearance, and composition as on the surface. The red loam and vegetable mould lie in regular alternate strata, though the strata differ in thickness as determined by the depth of water over the bottom and the number of days it has been submerged by each inundation.

The surface of the town-site when first settled had the appearance of being little else than white sand. The stratum of sand varies from one to three feet in thickness. Below this there is a stratum of marl, with here and there sections of red clay and conglomerate sand-stone to a depth varying from ten to fifteen feet; and beneath this we have hardly anything but white sand, and occasionally sand-stone. At a depth of from 30 to 70 feet large quantities of fossils are found, composed, not only of shells, but the bones of land animals, not only of the known but the extinct also.

The rocks in this section are all conglomerate sand-stone, abounding in water-worn pebbles and shells, chiefly marine. Springs are abundant in this section, and occur in almost every place where the rocks crop out, but the water is very impure, being impregnated with calcareous, argillaceous, and other mineral substances. Here, those who use spring or well water are not so healthy as are those who use cistern water.

I will next cursorily allude to the early settlement of this place, and to disease as it was then, and as it has been modified since, up to this time. In 1820 and '21, Mr. Andrew Robinson made a settlement on the river bank half a mile below the present town-site. He made it his home until 1833. He used river water principally, (which is brackish) and had but little disease in his family. In 1834, the present site was laid out into lots, and sundry improvements were made. The site on



which the town is situated was densely timbered with post oak and thick hammock undergrowth. When the country was invaded in the Spring of 1836, the population of the town was about 200. They nearly all fled before the invading army of Mexico, and had not all returned when I settled here in the fall of 1837. I was informed by the Hon. Anson Jones, M. D., and F. James B. Miller, that the diseases of the country prior to the time of my settling here, were simple in character and easily treated. They had both practised on the Brazos some ten or fifteen years before I came to the country. They treated cholera in Brazoria county at and near the mouth of the river in 1832 and '33, but had never seen a case of it in the interior. Intermitting and remitting fevers were the diseases they chiefly had to contend with.

When I came here in 1837, the population of the town was about 500 citizens. Transient persons to a great number, consisting of disbanded soldiers, and adventurers from the States and Europe, flocked in rapidly.

The town tract, about one mile square, was strewed with the boughs of the trees that had been felled for building, and other purposes. We lived badly. We were neither well fed nor comfortably housed, and we drank bad water; hence, we had a great deal of disease, consisting mostly of intermitting and remitting fevers, with some cases of diarrhœa and dysentery.

The great quantity of vegetable matter in a state of decay, not only the boughs of the fallen trees, but a great amount of vegetable mould on the surface which had been for ages accumulating, and had been in the mean time sheltered from the rays of the sun, were at once exposed to his direct rays. From these causes poisonous emanations took place to a great amount, and sickened every person in town. This state continued until 1843, with very little variation. To pass a season in our town without one or more attacks of fever was almost a miracle, though our fevers were almost in every instance open and mild and readily yielded to treatment.

1843 is long to be remembered by old Texians. It rained almost the entire year. Our prevailing winds here are from the South, and our country is almost always healthy while they are regularly from that direction. But this year there was no regularity in them; we had no regular currents in the atmosphere. The winds amounted to little more than an ebb and flow. The clouds were often stratified, sometimes as many as three or four strata moving in different directions. The alternations of temperature were great. Suffice it to say, disease was sown broad-cast. Every body was sick, and the fevers put on a different livery from anything I had seen before. Ordinary congestive fever was



common and of the most fearful type; the algid was by no means uncommon. With the return of cold weather, health was again restored to our population.

1844 and '45 were only remarkable in one particular. Our town in common with the country, suffered greatly from an erysipelatous fever, or what is ordinarily known as *black tongue*. The mortality among the aged, the infirm, children and the intemperate, was very great. This disease prevailed in the winter and early spring.

In 1846, '47 and '48, there was nothing worthy of note. In 1846-7, there was a great deal of tonsillitis, pharyngitis, and such like afflictions. The ordinary fevers of the country have progressively declined both in frequency and intensity since 1843.

In 1848 and '49, we had an epidemic of scarlatina.

In 1849 and '50, a great number of cases of cholera were brought mostly by steamboats. The mortality was considerable, mostly among negroes. Our citizens suffered a good deal from choleraic diarrhoea, but none died.

In the fall of 1850, typhoid fever first became manifest here, and has continued more or less up to this time, 1856.

1851. This year was healthy with the exception of typhoid fever, diarrhoea, dysentery and such like, until September, when in the course of a few days nearly our whole population (1000 to 1200) were prostrate with *dengue*.

1852. A very healthy year, with the exception of a few cases of typhoid fever, and a return of *dengue* in the fall, when all had it who had not suffered from it in 1851. The Baptist's held an association here in the fall, and nearly every person who had not had the *dengue* previously, contracted it; but it did not develop itself until they returned to the country, and I never heard of an instance in which the disease was communicated (by those who contracted it here) to any person in the country.

I will here make a few remarks about *Dengue*. It has occurred to me that there is a close analogy between it and yellow fever. This is shown in the violence of the attack, it being a disease of but one paroxysm; the intensity of the pains, the general expression of the patient, as red, wild eyes; flushed face, &c., and what attracted my attention particularly, was the hæmorrhagic tendency, especially among females. In nearly all females I treated, they suffered more or less on the subsidence of the disease from uterine hæmorrhage.

1853.—A few cases of typhoid, and hardly any other fever of any kind. On the 5th September, three gentlemen visited this place; two of them were from Galveston, and one from Harrisburgh. They had been

out from home ten days, and had left on account of the yellow fever, which was making great havoc in Galveston and Houston. They were all attacked at the hotel about the same time, of what I have no hesitancy in pronouncing *yellow fever*. They recovered soon, and the disease was not communicated to any person in the hotel.

On the 27th September I was called to see Mr. H., an Englishman, at 12 o'clock, M. I found him profoundly comatose, breathing natural, pulse about 100 and weak, head and body hot, extremities quite cool, and bathed in cool perspiration. His wife informed me that he had complained for two days of great pains in his head and back, but on the day before I was called in he had gone out and finished a job, but that he complained very much when he returned at night, took no supper, slept little or none, but rose in the morning early; brought a bucket of water, seemed to be exhausted, fell down on the bed, and soon became quiet, and when she tried to get him to take some breakfast, she found him insensible. I found that our Episcopal minister had been with him some hours before I was called.

We did everything we could for him, but did not succeed in getting him out of the comatose state in which I found him until next morning, when he sat up in the bed and talked rationally for three or four hours, when he relapsed into a comatose state, and died about 6, P. M. After death he was the yellowest cadaver I ever saw.

He had lived in the suburbs of the town, hardly ever went out anywhere, but to his work and back home again, was a man of good habits, had been a resident of our place two years, was uniformly healthy. Now, did this man contract the disease (if it was yellow fever that he died of) from the fomites of the Englishman, Mr. B., and his wife, who told me that they both had had the disease in New Orleans a month or six weeks before Mr. H. was attacked? They came to Mr. H.'s house with some of their baggage, and occupied the same room with Mr. H. and family, eight or ten days before Mr. H. was attacked. After the death of Mr. H., his widow and two children had a mild attack of a continued form of fever, but the disease spread no farther in this quarter, notwithstanding from two to half-a-dozen persons were constantly with the poor man, from the time I was called to him until he was buried.

October 1st, I was called to Mr. N. He occupied the first story of a brick house, the floor of which is laid on the ground. He used the room (say 50 by 25 feet,) for a billiard and drinking saloon. Those who drank spirits at his bar were in the habit of tossing out spirits or water, &c., on the floor; this kept the earth under the floor constantly saturated with the refuse from his bar. He was in the habit of receiving ice every



week from Houston, and of keeping it in his bar-room. It was more-over his custom to sleep during the day and sit up the principal part of the night; during the night the house was almost constantly closed, during which he breathed over and over again the noxious exhalations from beneath the floor, to say nothing of the deterioration the air of the room underwent from being crowded with a great number of persons drinking, smoking, &c. But to the case. He had a severe ague before I saw him, and was reacting when I reached him; was delirious, face very much flushed; eyes red and watery; pulse 110, strong and full; tongue moist, coated as with white paste; great irritability of the stomach. Suffice it to say, I treated him promptly; gave him the usual treatment for *yellow fever*, and had him in a good general perspiration in four hours, and that he was almost without fever from the third day, and by the fifth had some return of appetite. But his nurse neglected him; a norther sprung up, and he got chilled and relapsed, and came very near dying, but finally got well. Although he had not the least evidence of *ptyalism*, he had considerable hæmorrhage from his gums, nose, and the blistered surfaces. Did he contract the disease from the blankets, sawdust, &c., in which the ice was enveloped? We had no other cases in town this fall.

1854.—This year, with the exception of typhoid fever, and some other affections not worthy of note, was very healthy until the 5th of October, when I was called in consultation with Dr. Black to see Mr. G. He had unmistakable symptoms of yellow fever. He died on the fifth day with black vomit, and became very yellow after death. Before death he had hæmorrhages from his gums, nose, and a blister over the epigastrium. He had not been to Houston or any other place where the disease was then prevailing, for several months.

10th October, I had two cases, Mr. L. and Mr. J. They both occupied the same part of the town in which Mr. G. passed most of his time during the day, and often until bed-time, viz., the house of Austin and Bertrand, a brick house, with a brick ware-room back, and immediately adjoining the building. The ware-room was at the time in a very leaky and filthy condition; not only so, but an extensive foundation was made but a short time before, for two large brick houses immediately adjoining the house of Austin & Bertrand. In digging out the foundation, a large quantity of earth was thrown out, it being about three feet to clay. The lot having lain vacant for eighteen or twenty years, and being about the centre of the town, and situated between two of the largest business houses in the place, it is but reasonable that a great quantity of impurities of one kind or other had percolated through the sand to the clay, and that when exposed those noxious exhalations from the earth



would contaminate the atmosphere for some distance around. Be this as it may, at this spot the three first cases occurred.

October 17th, I was called to one case from Houston. I treated the case in the suburbs of the town; no member of the family nor any person that waited on the patient contracted the disease. Mr. B. contracted the disease here, and left for the West, and died on the fourth day of his illness, with black vomit.

30th October, one case. November 5th, three cases, two mulattoes and one negro. These cases occurred within twenty feet of Austin & Bertrand's ware-room. 6th; our post-master was attacked. 7th; his assistant; also Mrs. S. 8th; three cases. 10th; one case. 12th; norther; temperature 30°.—Of the above four died and three had black vomit.

I will bring this paper, which is already too long, to a close. But before doing so, I will state that yellow fever has prevailed more or less almost every year since 1839, in Houston; that our intercourse both by mail and otherwise has been almost daily, and that although we have had cases brought into our midst, repeatedly, the disease has never spread. Secondly; that as intermitting, remitting, and such affections have become less common, diseases entirely different from them have apparently come in their stead. Thirdly; that fevers identically the same that we suffered so much of, from 1837 until 1844, are very common within a few miles of this town, where persons are felling the forest and making farms, either in the Brazos bottoms, or in hammock land. Fourthly; that *dengue* did not prevail in any of the towns near this, in 1851 and '52 although the places have all been built during the last nine or ten years; and in all of them they suffer considerably yet from the ordinary fevers of the country.

Then, is it not a fact, that in countries where the ordinary miasmatic fevers prevail to any considerable extent, just in proportion as men remove the influences that give rise to them, typhoid fever, *dengue*, and yellow fever become more common? In other words, that the causes of what are known as miasmatic fevers lie latent in our forests, &c., and man, in reducing the forest to a state of cultivation, renders those causes active; and after a few years those causes are either decomposed or dissipated by the direct rays of the sun, or swept away by the rain. Then, is it not reasonable, judging by the facts we have before us, that through the agency of man, causes are generated or developed which, when in sufficient concentration, will produce *dengue*, and typhoid fever, or when still more multiplied, will cause that great scourge of our country, *yellow fever*?

Yours respectfully,

T. J. HEARD.

ART. II.—*Yellow Fever of 1855 at Pass Christian, Mississippi.*

*To the Editor of the N. O. Med. and Surg. Journal:*

OUR Yellow Fever Epidemic this season, if indeed it may be so styled, where but few cases, say 30 or 40, occurred in so large an unacclimated population, was much more mild in its character, less infectious, and so far as my experience and observations will allow me to judge, much more manageable than in 1853.

I attended this season some twelve or fifteen cases, during its sojourn among us, in different parts of our town and its adjacent neighborhood, out of which number I am pleased to say that I lost none. My treatment varied considerably from the usual course pursued in '53, and from its happy results as well as from its characteristics of the disease as it occurred among us last season, I cannot doubt but that it was predicated upon a correct pathology.

I noticed among the first cases to which I was called, that upon minute examination of the tongue, I could always detect about its tip a number of red papillæ; this, together with some dryness of the mouth more or less thirst, a sense of fulness or oppression about the epigastrium, accompanied, perhaps, by nausea, induced me to attend particularly to the condition of the stomach, and to endeavour, as far as possible to guard that important organ from injurious influences.

To accomplish this important indication, I generally ordered among the first remedies prescribed, a fly blister to be placed upon the epigastrium, sufficiently large to cover that and a portion of the right hypochondriac regions; ten to twenty grains calomel, (if an adult,) should the bowels be at all constipated—if loose, from three to five grains every three or four hours; warm orange leaf tea; thin corn meal gruel, or flax-seed tea, to which was added a little spirits of nitre to hasten its action upon the skin. The patient being placed in bed the mean while and carefully covered, avoiding as far as practicable exposure to the external air; and should the weather be cool or changeable, let blankets be placed next the person of the invalid; let the purgative be continued until it acts freely upon the bowels, after which, should the stools be of a dark or acid character, give a teaspoonfull of calcined magnesia, which may be repeated if necessary; let the blister be removed after having drawn sufficiently; the part to be kept sore for a few days by being dressed with lard to which should be added a small quantity of the blister ointment. Carefully avoid exposure until the appearance of the tongue, skin, passages, &c., become natural, or begin to assume that character which usually took place about the third or fourth day; after which I used tonics, quinine, the ferrocynate or sulphate, the for-



mer I prefer, in doses of one grain every hour, in conjunction with camomile tea, in small but repeated doses, which appeared to produce the most happy effects in a major portion of my cases.

Exposure, and indigestible articles of food carefully to be avoided. The bowels were kept moderately free, and they all recovered rapidly with but few unfavorable symptoms, and none kept from their usual avocations, more than seven or eight days. Yours truly,

PASS CHRISTIAN, MISS. Dec. 23d, 1855.

W. H. CALVERT.

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ART. III.—*Treatment of Typhoid Fever*: by JOSEPH R. SMITH, M. D.,  
of Elyton, Ala.

IN presenting any subject to the public on medical pathology, we conceive it to be of infinitely greater advantage to stick to a true and correct relation of facts as presented to the medical practitioner, than to a lengthy detail of fine spun theories, as far-fetched hypotheses, deduced from doubtful, or probably, false data.

Most writers on medical subjects at the present day, I regret to say, too often have a theory to sustain, when making innovations on the treatment of the most formidable diseases of the country, greatly to the detriment of the speedy advancement of sound pathological information, and a safe and correct treatment of pathological lesions when truly ascertained. And that such has been the case in that very troublesome and common disease—typhoid fever—the “*opprobrium medicorum*,” we are the more thoroughly convinced from every article we have read upon the subject. There is not, at the present day, scarcely a physician of any note or experience in the treatment of typhoid fever, when not complicated with other diseases, but believes that the main, or probably the only pathological lesion in this disease exists in Peyer and Brunner’s glands. To this opinion we do not entirely assent; but as our opportunities (on account of a country situation) for making post-mortem examinations, have been too limited, to speak authoritatively on this head, we found our own treatment on this hypothesis, or fact as it may be.

We have now been observing and treating typhoid fever since 1845; at which time it prevailed in this village as an epidemic; and we are now convinced from an external observation of the disease in all its varied forms, shades, types, and phases, that there exists in the medulla oblongata morbid lesion of such a character, as to have as yet escaped the



scrutinizing eye of the microscopic pathologist. What that lesion may be, or is probably like, we do not in this short article pretend to say, but of its existence we do think all who have treated this disease in all its varied forms, grades, and stages, will have reason to suspect. And we doubt not, but that if our microscopical pathologists in their future post-mortem examinations after morbid lesions in this disease, will direct their researches to the medulla oblongata, and the base of the brain generally, they will ultimately have their labors rewarded by such a discovery. The field is an enticing one, and he who proves his success by his labors, will not only establish an enviable professional reputation, but be counted a benefactor of suffering humanity.

But to the object of this communication, which is to say, that for six months past *we have been treating successfully typhoid fever of all forms, grades and stages, by locking up and so keeping the bowels, until the patient is convalescent beyond a doubt*, and as for our success after a correct and unvarnished statement of facts, we leave our readers to judge.

Our experience extends to twelve cases only, all children under fifteen years of age, except one patient aged about forty-five. In every case we have been successful in effecting a cure; in a majority in three weeks; three cases, well marked in every particular, terminated in ten days; these three cases we will remark were seen by us during the incipient stages of the diseases—recognized and prescribed for accordingly upon the plan hereafter to be detailed. None continued longer than four weeks, save one, a negro boy, who relapsed after being convalescent, on account of carelessness on the part of the nurse, who failed to keep him well covered during one of the extreme cold nights of last February. Out of this number of patients we had every variety of symptom that ever attends in this disease, except, probably, epistaxis and melæna.—Some two or three were even complicated with well marked pulmonic symptoms.

That our readers may know that we were treating pure typhoid fever, and not a "*typhoid state*" of some other disease, we will first give a succinct detail of the most prominent symptoms which prevailed in the cases we treated on this new plan, and then relate the treatment.

The fever was usually preceeded for several days by general lassitude, *malaise*, and indisposition to mental or corporeal exertion, with slight chilly sensations, which were followed by, for the most part, a persistent fever; but in some instances there would be partial remissions every twenty-four hours, though usually without perspiration, or any abatement in that train of nervous symptoms, which almost invariably attend; such as sub-sultus tendinum, low muttering delirium, dilatation of the pupil, and tinnitus aurium, together with deafness. After the fever was fully

developed, producing the above unmistakable train of typhoid symptoms, the palms of the hands and soles of the feet would become remarkably dry, hot and crusty, and it is at this stage of the disease that we could the more easily discern the characteristic sudaminae which appeared in almost every patient under twelve years of age; pulse generally weak and frequent, patient rarely complains of any pain, but will say nothing ails him or her, and to the question—how they are—will generally reply, “pretty well,” or “getting well,” when probably, in ten minutes, he will be muttering to himself some unmeaning incoherent sentences; from this kind of delirium he is generally easily aroused, but as quickly lapses into the same state. Where this train of symptoms have been neglected for two or three days, we have usually found meteorism, abdominal tenderness, the bowels much disposed to diarrhœa, with considerable “*Grouillement à entrailles*,” both of which latter symptoms invariably gave way so soon as the grand desideratum was accomplished—*locking up the bowels*.

The tongue in most cases is dry, parched, cracked, and covered with a dark brown fur; the teeth and lips in severe cases were covered with an incrustation of similar appearance.

*Treatment*.—The first inquiry we make now, on visiting and recognising a case of typhoid fever is—have the bowels been running off? If we find they have, we immediately administer a large dose of Tinct. Opii, thirty, forty, or sixty drops, proportioned to the frequency of the alvine discharges, and direct a similar dose to be administered at every subsequent operation. After the first dose of Laudanum, we begin with the following powders:—R *Tannin* 36 grs.; *Pulv. Doveri* 3j. *Mix. It. pills or powders* 12; one to be given every two, four, or six hours, dependent entirely on the frequency of the purging, and the severity of the abdominal symptoms. These powders we even continue to administer notwithstanding the first few days by the assistance of the Tinct. Opii., may have checked the purging and quieted other abdominal symptoms; but so soon as the latter object has been accomplished, we suspend the use of the Laudanum, and continue the powders at greater intervals—generally about every six hours. And under no circumstances do we attempt to act on the bowels with any purgative whatever, notwithstanding the patient may not have had an operation for ten days. In every case where we have succeeded in *completely locking up* the bowels, (and we have as yet succeeded in all attempted,) and maintaining that condition sufficiently long, we have had the gratification of seeing an amelioration in the severity of all the troublesome symptoms, and by scrupulously persevering with the powders, are sure to have a safe and speedy convalescence. Where the bowels have been kept quiet as long as three days, we generally find the skin assuming a moist, healthy feel;

the tongue becomes more moist, eyes and intellect more bright, with some return of appetite; the latter we invariably gratify, generally selecting the quality and quantity ourselves.

Where cephalalgia and muttering delirium attend, evidencing great cerebral disturbance, we usually combine with the foregoing powder, Gum Camphor 3 grs. to each dose, with the happiest effect. Should a tympanitic state of the bowels exist, evidenced by a troublesome and sonorous borborygmus, we administer an occasional dose of Ol. Terebinth.; this drug we rarely administer in such symptoms, but we obtain the desired effect. If there exist much abdominal tenderness, with the latter symptoms, we rarely fail to relieve it with a great amelioration of the others, by putting on, as hot as can be borne, a common wheat bran poultice.

We are by no means wedded to our little class of therapeutical agents as given above; and would be willing to use any others answering as well; we only contend for the grand and principal object, viz: *locking up the bowels*; and when that is accomplished the patient is cured.

We have maintained the bowels in this closed condition, without the patient having a single operation as long as ten days; during the whole of which time we have had, in every case, the gratification of seeing a daily improvement in all the troublesome symptoms. In fact, we have never yet had a case, since treating upon this plan, but began to improve in every particular so soon as the bowels were stayed as long as forty eight hours, and the longer the condition was maintained, the greater the improvement.

Having already spun this article to an unexpected length, we will leave the *modus operandi* of this treatment to other and abler pens.

#### ART. IV.—*Healing Art vs. The Knife*: by J. R. FREESE, M. D., Bloomington, Ill.

WHEN a student, I remember to have heard our Professor of Surgery say in one of his lectures, that "the knife was but an *excuse* for surgery—a mere subterfuge which never should be resorted to until the Art (healing art) had completely failed." These may not have been his exact words (for he could talk a good deal more eloquently than I can write) but such was the substance; and I remember to have thought it a very strange remark, coming from one who so frequently and skilfully used the said "*excuse*."



Age, and surgical experience, however, have taught me the truth of his remark, and I now can fully appreciate that it is much more scientific and praiseworthy to save a limb by the art of healing, than amputate it by the art of cutting. Most young surgeons think it a great feat to cut off a limb, and since the community gives a man more credit for cutting off one leg than for saving a dozen, it seems but natural that the young surgeon should want to distinguish himself in this way, and thus many a limb is lost (cut off) which might have been saved by careful and patient treatment.

Of course, my remarks refer only to such cases as have a possible *choice* about them; and not to such as, upon first sight would be pronounced fit cases for the knife, and the knife *only*.

Age cools the blood—humanity and religion increase our feelings of responsibility—position gives us strength to pursue the right, regardless of the praises or curses of the community—experience and study give us wisdom and knowledge to save, and so it comes to pass, after awhile, that we save many a limb and life which might have been sacrificed to our youthful and inexperienced ambition.

A case in point will illustrate this view better than a volume of theorizing.

The first summer I came to the West, I was called upon in great haste one day to visit a young man who had been thrown from an engine, and had one of his arms broken and horribly crushed beneath its wheels. From the representations of the case, I at once supposed that the arm would have to be amputated, so, seizing up my amputating case, I hurried to the spot as speedily as possible. Upon examining the case I found a compound comminuted fracture of the humerus, at about the junction of the upper third with the lower two thirds; in addition to which, the lower portion of the bone had been driven upward along the upper portion, then glanced off toward the clavicle, tearing muscle and tissue, until the point of it reached about mid-way of the clavicle, underneath the pectoral muscles; while the lower end of the upper third had been driven through the integument, producing a horribly lacerated wound, into which two fingers could be easily passed. The bone was broken, not “transversely” or “obliquely,” but splintered off, leaving ragged, jagged ends to each, like a broken stick of tough, straight-grained wood; while a few isolated fragments lay in the wound. The patient was about 16 years of age, with bones tough and withy, and this accounts for the jagged character of the fracture.

After carefully examining the case, I could hardly make up my mind as to what was best. The *easiest* way for me was to amputate; and for so doing I would receive the *most praise* and *largest fee*; yet the

thought forced itself upon my mind, that there was a *possibility of saving* the limb. 'Tis true I thought it but a *bare possibility*—not more than *one chance in a hundred*, yet was it not my duty to give him the advantages of that one chance, even to the possible detriment of myself. On the other hand I thought, if I don't amputate, perhaps the boy may not only lose his limb, but his life also—what then should I do? Such were the thoughts that rapidly passed through my mind; but my feelings of humanity and the good of the boy soon triumphed over those of a more personal character, and I resolved to try to save the limb, even though there were but one chance in a hundred. I have not the time, neither is it necessary to this illustration, to give the every-day history of the case, and the treatment thereof; suffice it to say that a large, suppurating abscess formed beneath the pectoral muscles, at the point reached by the ascending humerus; that, becoming stopped below, it required opening, and that pints of pus were discharged therefrom; that a suppurating sinus was formed at the point of fracture; that hectic or irritative fever supervened, and, at one time, seriously menaced the life of the patient; yet, after all these formidable accompaniments, the patient, after being under treatment a few weeks, was finally rescued from all danger, the bone united, the abscess and sinus got well, and the young man recovered the use and strength of his arm almost equal to the other uninjured one.

Who can calculate the worth of that arm to the young man? Ask yourself the question—what amount of gold would I take for my right arm? You hesitate in the answer—I thought as much; and yet that young man's arm was saved with ninety-nine chances against, to one in its favor.

I might relate other cases which have occurred in my own practice, as illustrative of the same great truth, and so could every surgeon of much experience and observation, yet enough has been said, I trust, to put every young surgeon on his guard, and make him remember the now well-established axiom, that "the Knife is but an excuse for Surgery," and that it is infinitely better to do right, work harder, have patience, and keep a conscience "void of offence," than to cut and slash, because an unintelligent community may applaud the one, and say nothing of, or condemn the other.



ART. V.—*Case of Twins, one being a Monstrosity; Uterine Hemorrhage*: by W. L. GAMMAGE, M.D., of Rusk, Texas.

ON Thursday morning, the 29th of December last, at about eight o'clock, A. M., I was called to see Mrs. L., who was in labor. I arrived about half-past eight o'clock; found her delivered, after a labor of fifteen minutes, of two seven months children, a boy and a girl.

Upon examination *per vaginam*, I found her flooding profusely, and extremely prostrated. It will be remembered that the delivery of the children had taken place about two hours before this, and the placenta had not been removed. Patient's pulse was gone, arms and legs cold, great thirst, and an entire absence of expulsive pains.

I attempted to remove the placenta but could find but one cord, which upon inquiry was explained by the lady's mother telling me that one of the children came away detached from the placenta. I soon found that the placenta were attached firmly, and could not be removed by any ordinary means. I then attempted an introduction of the hand, but failed; a farther scrutiny satisfied me that hour-glass-contraction of the womb had taken place. I again attempted a forcible introduction of the hand, but the excruciating pain that it caused produced the most distressing cries from the lady, and having again failed, I gave her 10 grs. *Acetas Plumbi*, thirty drops *Tinct. Opii*, in two drachms *Eau-de-vie*, and left her to rest, with the hope that the hæmorrhage would subside and her strength would return.

After an hour's delay, which she seemed to spend in sleeping, I made another attempt at delivery of the placenta, and again failed. Repeated the sugar of lead, laudanum, and brandy, and commenced the free use of infusion of ergot: I sent for Dr. Armstrong. Dr. A. arrived at half-past two o'clock, P. M., when some slight pains coming on, the doctor made an effort to bring away the placenta and very happily succeeded—profuse hæmorrhage ensued—again resorted to the first prescription, which seemed to act beneficially in checking the hæmorrhage, and quieting the patient.

We then called for an examination of the children, both of which I had seen before. The one last expelled was well-formed, and seemed to be doing well. It weighed five and a-half pounds. The other child, which was the first one expelled, and which came away detached from the cord, was the strangest looking human creature I ever saw. I suppose it would have weighed about six and a half pounds.

This anomalous foetus was a female. It was expelled from the womb by a nates presentation, the arms drawn down between the knees, and the legs flexed upon the abdomen.

The abdomen remarkably distended, chin and mouth protruded, and resembling very much the shape of the ape; the eyes were directly upon the top of the head, and very much protruded, so much so indeed, that the palpebræ would not cover them; all the bones of the cranium seemed fully developed, save, perhaps, the occipital, which seemed shorter in its horizontal diameter than natural, and the whole head was flexed upon the vertebral column.

There was a complete absence of the integuments of the head, down to about the first lumbar vertebra, extending on both sides of the spinal column for three-fourths of an inch. The whole of the denuded surface was purplish and bloody, and there oozed from it a thin bloody water, which discolored the fingers when touched. At the base of the fetal head were two valve-like appendages, resembling the mitral valves of the heart, and at the base of these was found a canal, which, upon being traced with a probe, was found to lose itself in the cellular tissue beneath the perfect integument on each side. The spinal processes of the vertebrae were entirely absent, and the whole spinal column distorted and mis-shapen, beginning to curve inwardly about the seventh cervical, and continue to the sixth lumbar vertebra. I have no reason to suppose that the brain was deficient, though, as autopsy was denied, I am not prepared to state precisely upon this subject. At any rate, there is reason to believe from the configuration of the the head, that the child would have been greatly deficient in intelligence had it lived. The auricular appendages were remarkably long, thick, and pubescent, resembling very much in shape and general appearance those of the ape.

The hair, instead of being upon the head, was profuse upon the lower edge of the occiput, and temporal bones and shoulders; there was no appearance of any neck at all. When lying upon its abdomen and viewed from the front, it resembled strikingly a large frog in the act of leaping.

I was told that it survived only about three minutes after the expulsion, and the function of respiration which commenced as soon after birth as is usual in healthy formed children, was free, easy, and natural; though it never cried nor gave any other sign of vitality than that of ephemeral breathing.

In regard to the causes which tend to produce monstrosities, there prevails a great variety of opinions; even amongst the learned, there is a general tendency amongst the members of the profession to deny the existence of peculiar imaginative influences of the mother, whilst "*enciente*," upon the *fœtus in utero* and even to deny the existence of "*Nævi Materni*." Reason, however, as well as authenticated experience of the past, prove to us that imaginative influences do affect children unborn, and that *nævi*



*materni* exist more in fact than fancy as the commonest practical observations *prove* conclusively.

Dr. Purple, in an able paper upon the subject of "*Fatal Monstrosities*" published in his New-York Journal of Medicine, vol. 5, new series, No. 1, suggests two other exciting causes: 1st, the changes accidental otherwise experienced by the foetus during an early period of its uterine gestation; and, 2nd, a defective condition of the primitive germ. It is not my purpose here to enter into a discussion of the comparative merits of the above propositions, but the facts developed in this case go strongly to prove that mental disturbances of the mother's pregnancy, materially affect the well being of the foetus *in utero*.

I made inquiry of the lady's husband touching the matter, and he informed me that about two months after the pregnancy of his wife, she went with several ladies to see a large snake which had been killed on a neighboring plantation; whilst looking at the bruised and mangled body of the serpent, she became very sick at the stomach and had to go home. Whether this incident had any influence in producing the deformity of the child, I leave for others more learned than I to determine. I must acknowledge there seems to me some considerable degree of plausibility in the belief that it had. The mother's life was in great danger from the excessive loss of blood, until about 2 o'clock, A. M., the next day, when under the repeated use of brandy, ammonia and sugar of lead, blisters to the extremities, and the strictest observance of quiet, she became warm, and continued to improve until she entirely recovered.

It is hardly necessary to observe that I strictly enjoined upon her attendants the necessity of letting her know nothing about the deformity of one of her children; her inquiries being answered by the simple statement that it was still-born, and to this day I am not aware that she knows the facts of the case.

RUSK, CHEROKEE CO., TEXAS, April, 1856.

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ART. VI.—*Case of Abscess of the Liver*: by JAMES E. SMITH,  
M. D., Pine Hill, Rusk Co., Texas.

ACUTE Hepatitis, terminating in Abscess of the Liver, is such an uncommon disease in our country, that, thinking the report of a case of it might be interesting to the profession South, I have accordingly submitted it, not from any originality in the treatment, but with a view to

elicit some information from your correspondents or contributors, who are more competent for the task than myself.

I was called, on the 15th of November, 1855, to see Mr. J. J. N., in consultation with Dr. B. Was informed that Mr. N. had been sick two weeks; that he was taken with slight chill, followed by febrile excitement; tongue coated; eyes and skin of an icteroid or jaundiced color; dull pain over the region of the liver, and pain on pressure over that region as well as over the bowels generally; loss of appetite; debility; torpid bowels, &c., The doctor informed me that he had given him very small portions of blue mass, soda, and Dover's powders, and occasionally small quantities of camphor, quinine, and bark, to promote diaphoresis, equalize the circulation, &c., &c. Such had been the treatment to the present time. His present condition, decubitus dorsal—half-reclined, shoulders supported by a chair and pillows; pulse 125, corded, irritable and weak; extreme and excruciating pain over the region of the liver; bowels tympanitic; in fact the extreme pain and tenderness hindered him from assuming the horizontal position; had four or five evacuations in the last six or eight hours, white and thin, no fecal odor about them: tongue loaded with a white coat in the middle, and red at the edges; no urine passed in the last twelve hours; an anxious, careworn expression of countenance, indicative of great pain and prostration.

Upon consultation with the attending physician, it was agreed to give the following:—*R. Calomel* grs. xxxvj; *Opium* grs. vj; *Ipecac* grs. iij; mix and divide into six pills, and direct one every three hours. Also, to bathe his feet and legs in as hot salt water as he can bear; the bath to be made additionally stimulating by mustard; for his extremities were very cold; also, to draw a blister 8 by 10 over his liver, extending over towards his spine. He was put on this treatment at one o'clock, on the night of the 15th.

16th, one o'clock, p. m.; has rested well; bowels not moved since he began the pills; blister had drawn well, much to the relief of the pain; bath had a fine effect in restoring warmth and vitality to his extremities; pulse softer and less frequent; skin more moist; countenance less anxious; can almost lie down without pain. Prescription:—continue the same pill six hours longer, and if the bowels are not moved, give a dose of castor oil, and, after the operation of the oil, take the following: *R. Hyd. Pil. Mass*, grs. xij; *Ipecac* grs. vj; *Sup. Carb. Sod.* grs. xxvj; mix and divide into twelve powders, and give one every four hours, alternated occasionally with a teaspoonful of the following:—*R. Tinct. Valerian*, *Sp. Nitr. Dulc.* āā, f ʒj; and direct blister to be dressed with mush poultices.

18th; patient expresses himself some better, although his case is



still critical. Can lie down without pain—bowels less swollen—has had several free evacuations from his bowels, evincing that the liver and secretions generally were responding to the remedies addressed to them; urine copious; pulse 110, softer and fuller; it has lost that corded irritable feeling it had; prescription the same, only add  $\frac{1}{2}$  gr. of calomel to each powder.

19th; patient much improved, blister healing up; no soreness in the bowels nor tympanitis; pulse 90, soft; appetite returning; stronger; and expresses himself better in every respect; urine natural, and evacuations more yellow and consistent than at last visit. Prescription: *Infusion Cinchona*, a table spoonful 4 times a day, with a tea-spoonful *Tinct. Valerian* in each dose; and at night one of the following pills: *R. Blue Mass*, grs. xij; *Sod. Carb.* grs. xij; *Quinine Sulph.* grs. vj. mix, divide in six pills.

22nd; found patient better; some appetite; much stronger; secretions in good condition; pulse 78; he is cheerful, and there is every indication of a speedy convalescence. It was agreed in consultation to give him the barks and valerian as before, and also for him to take the *Syr. Iodid. Ferri* in 10 drops, gradually increasing the dose until he took 30 drops; then decrease in corresponding ratio. I discontinued my visits.

30th; was called suddenly and in great haste to see Mr. N., his family physician being out of the way. Found him with a red, dry tongue, very feeble; restless; no sleep; bowels tympanitic; soreness on pressure over his liver; yellow eyes and skin; some headache; a paroxysm of fever every night, followed by copious diaphoresis; pulse 100, and hard. *R. Ipecac* grs. vj; *Sulph. Morph.* grs. ij; mix, and divide into six powders, and take one every four hours; take a *Blue Mass* pill at night. Discontinue *Iod. Ferri*, and take *Barks and Valerian* as before advised.

Dec. 2d; patient had rested well since last visit: tongue moist and not so red; eyes more natural; urine natural; bowels not swollen so much, but still there is some pain on pressure over the posterior portion of the liver. In addition to the symptoms already enumerated, he has from the pressure on his sacrum in lying so long, an ecchymosed or bruised place, about the size of a half dollar, the beginning of a very bad bed sore; there also appears to be a slight prominence or enlargement on the posterior surface of his liver, between the false ribs and crest of the ilium inclining toward the spine. Prescription: *R. Tinct. Valerian*, *Tinct. Cinchona*, āā ʒij: Dose, teaspoonful every 4 hours. The bed sore to be washed in strong solution of Sugar of Lead; reapply the blister over his side. Hot *Pediluvium* at night, and

also every night to take the following pill: *R. Blue Mass*, grs.  $\text{ʒv}$ ; *Sulph. Morphine*, gr. ss.; *Ipecac*, gr. j.

5th; patient about "*in statu quo*;" he rests well at night, but still towards morning has the sweat; the fever not so prominent as heretofore; some evidence of fluctuation over the prominence alluded to at last visit; bed sore worse. Directed the blister to be dressed with mush poultices. Stop the Blue Mass, and take an opiate at night of Morphine and Ipecac, and, take also, the following three times a day: *R. Elixir Vitriol gtt. xij*; *Infusion Cammome Flowers*, q. s. *The Elixir Vitriol to be gradually increased, and to take occasionally of the barks in infusion and the valerian, and make pads to keep the bed sore off the bed, and relieve pressure—use astringent washes as before.*

8th; patient about the same; I saw him every few days for the next ten days, and became satisfied that the abscess would have an exit externally, but taking into consideration the great danger of operating on him if there should be no adhesions of the peritoneum, I deferred it as long as possible, and held him up on a systematic course of tonics, alternating them to suit his caprices as far as was consistent with the exigencies of the case, until the 18th.

18th; he appeared to-day much better, in fact would sit up on his bed and converse cheerfully, and has a good appetite; no fever; no night sweat; digestion good; pulse normal, &c. The abscess however was still there and *pointed* more than it had at any previous visit, and under pressure, fluctuated more distinctly. The most prominent point of it was just below the margin of the false ribs on the right side, rather inclining towards the spine.

I operated on him in the following way:—He sat upon the edge of a low bed, and leaned his head upon the lap of an assistant, who also held his hands. I then, with a sharp bistoury, cut through the skin and cellular tissue; then with an abscess lancet opened the cavity, from which issued an enormous amount of pus in a semi-decomposed state. It discharged in the next twelve hours, I would suppose, at least half a gallon. His system was in the meantime supported by the administration of wine and stimulants. He stood this immense drain on his system, however, better than one would suppose who never witnessed it. A wide roller was applied, and under that a soft poultice; directed the wound to be kept open by keeping a tent in it upon the discontinuance of the flow of matter. His strength to be kept up by the tonics, as before, with the addition of wine and nutritious diet. Prescribed, also, an opiate at night.

19th, is cheerful; wound still discharging; rested well from the



effects of the opiate; continue the treatment. Patient did well and apparently improved for the next twenty days.

1856, January 8th; visited Mr. N.; present condition—wound healed up; no enlargement on that side; appetite good; tongue clean; digestion good; is able to walk about the room, and goes to the table for his meals. For the last three days, however, has had some fever, followed by sweats at night; sleeps none only from the effects of an opiate. Treatment: thinking there was about to be a reaccumulation of the pus, and deeming its early evacuation desirable, I dissected down through the skin and cellular tissue, very near to the peritoneum, near the old wound, and filled it up with lint. Directed an opiate at night; *one grain of Sulph. Quinine in 10 drops Elixir Vitriol three times a day; bowels to be moved if desirable by senna, and to have wine and nutritious diet.*

January 12th; patient about the same, only has contracted a violent cold, the weather being very severe; abscess had began to discharge a considerable quantity. Continue treatment with the addition of syrup of squills for cough.

15th; the patient was under my immediate attention for the next fourteen days, having removed to my house, a distance of fifteen miles. The abscess discharged for a few days, then stopped, and his general health appeared to improve, he being still sustained on the same general plan of treatment. Notwithstanding which, about the 25th or 26th, the same train of symptoms began to show themselves again, viz: a slight fever at night, followed by night sweats, which were very copious; debility; nervousness; hypochondriasis, &c., &c.

29th; went home. Prescription:—*Huxham's Tincture of Bark, with  $\frac{1}{2}$  grain of Quinine, three times a-day as a tonic; Brown Mixture for cough, and opiate at night; also, if nightsweats continued, Elixir Vitriol in the usual dose.*

February 8th; patient no better; still coughs; is very weak; opened abscess again—discharged freely. Prescription:—*Syrup Squills with the addition of a small quantity of morphine as an anodyne expectorant; syrup iodide Iron as a tonic; appetite being still good, directed nutritious diet and wine.*

17th; patient worse—has had a rigor every night for several nights; appetite failing; debility more apparent; continue expectorant; leave off the iron, and 6 hours before the next expected rigor, give the following: *R. Sulph. Quinine grs. xij; Sulph. Morphine gr. ss.*

18th; missed his paroxysm, and has rested well and calm. It may here be remarked that his bowels were very regular during all of the

above treatment and were easily moved when this was deemed advisable, by injection.

23d; patient getting worse; very weak and much emaciated and very despondent. He continued to grow worse until the 28th; when he began to sink rapidly, coughing up large quantities of pus, complaining of very severe pain in his side and breast, great weakness and difficulty in respiration; a thready, weak and very rapid pulse. I stimulated him with wine, opium, brandy, valerian, camphor, musk, &c., &c., all without avail. He finally succumbed to the disease in defiance of the medical art, on the 2nd of March.

No post-mortem was permitted. Remark: 1st.—This case demonstrated the “paramount importance” of a full antiphlogistic treatment in the first stage or period of acute hepatitis. Suppose that this man had been bled freely at first, then purged with mercurials, then blistered, all within the first 8 or 10 days of his illness, would his disease have eventuated in hepatic abscess?

2nd.—“It appears to be quite certain that the opening of an hepatic abscess is a matter of considerable nicety, requiring a great deal of caution.” Keeping this advice of Dr. Stokes in view, I delayed sixteen days for nature to bring about the “condition for success which is the circumstance of adhesion taking place so as to prevent the matter from getting into the peritoneum.” Should I meet with another case, I should operate sooner, and in the manner I operated the 2nd time in the present case as advised by Dr. Graves. The advantages would be that the matter would be invited to the surface before forming so large a sack; for the sack in the case formed a secreting surface which neither nature nor art could cure.

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#### ART. VII.—*Diseases of the Liver*: by BENNET DOWLER, M. D.

In this article it is not intended to give even one typical case, including post-mortem examinations, of all the varieties of hepatic disease observed by the writer, as the limits of the Journal will not at present allow of so great an extension.

Diseases of the liver, and the morbid humors resulting in that organ, were viewed by the ancients as predominant and fundamental in pathology. Hippocrates enumerated four cardinal humors, namely:—blood, phlegm, bile, and atrabile, or yellow and black bile. He maintained that the bile augments in summer—the black bile (atrabile)

in autumn; the latter being by far the most dangerous and fatal. "All diseases, if they are internal, proceed from the bile or phlegm—melancholy from black bile, causing paralysis; those whom atrabile torments become diseased whenever the blood is overcharged by bile and phlegm."

Passing over two-and-twenty centuries, to the beginning of the second quarter of the present, liver-complaints, both functional and organic, redundance or vitiation of the bile, portal obstruction and congestion, were, to a great extent, the supreme and indisputable dogmas which reigned in the British and American Schools of Medicine. Venesections, local blood-letting, cathartics, blisters, and mercurial medications, were the remedies then required. Many diseases not seated in the liver were thus cured—peradventure aggravated in some cases by treating them as hepatic affections.

In France, on the other hand, Broussais, who for a time inaugurated and upheld *gastro-interitis* as the universal Potentate in the realms of pathology, contended that hepatitis was but secondary to the former. Broussais' therapeutics, that is, venesections, leechings, and starvation-slops, &c., were different, but no better than the curative plans of the ultra-hepatic school. But disease then, it may be safely assumed, was neither exclusively gastric, nor exclusively hepatic.

The pathological anatomist who shall dissect a thousand bodies taken indiscriminately, will not only find examples of hepatic abscesses, the diagnoses of which had not been made out by the attending physicians until revealed by the post-mortem examination, but also many other lesions alike unsuspected, as hypertrophy, atrophy, induration, softening, increased tenacity, diminished cohesion, fatty, serofulous, granular, nodular, scirrhus, and cancerous degenerations; anæmia, hyperæmia; interstitial fibrinous, sanguineous, biliary, and tubercular deposits; varied-diminished and increased adhesion between the hepatic envelopes and gated abnormalities of color, gray, whitish, yellow, red, and purplish; the parenchyma, with thickening, opacity, and other changes in the former; inflammation, obstructions and closure of the hepatic vessels, particularly in the portal circulation.

The obliteration of the portal vein is according to some recent writers, frequent. Thus, Prof. Gintrac of the Medical School of Bordeaux, in two papers having for their title "*Observations et Recherches sur l'oblitération de la veine-porte*," in the Jan. and Feb. (1856) Nos. of the *Jour. de Méd. de Bordeaux*, has ably investigated this neglected subject, which he has illustrated by numerous clinical histories and post-mortem examinations.

Syphilis is supposed to originate hepatic disease. At a meeting of



the Medical Society of Strasbourg, (February 7th, 1856,) Professor Schützenberger read a clinical paper upon syphilitic degeneration of the liver, accompanied with the history of a case in a syphilitic female. He observes that certain lesions of both the liver and lungs, in new born children, have evidently a syphilitic origin. He attributes some very severe cerebral maladies to the same cause.

Inflammation of the liver, terminating in suppuration and abscesses, unconnected with traumatic lesions, is sometimes insidious—always dangerous. Indeed fatal traumatic lesions occur, in which the abdominal walls appear to sustain little or no injury, and which a post-mortem examination alone can elucidate. In the Glasgow Med. Jour., for April, 1856, Dr. John Crawford reports a case which occurred on the 6th of December last, in which a boy, over whose body the wheel of a porter's barrow passed, died in half an hour. Under the authority of Sheriff Smith, Drs. Crawford and Patterson made and reported the following post-mortem examination:—

“The body, which was that of a healthy boy, about nine years of age, presented externally no traces of violence, except a slight abrasion on the back part of the right elbow.

“On opening the belly, that cavity was found to contain upwards of a quart of fluid blood, with several large and firm clots. On the upper or convex surface of the liver was a deep rent, semicircular in form, about seven inches in length, and in its middle part nearly extending through the whole thickness of the organ. The other organs of the body were healthy but pale. The structure of the liver was also healthy, but it was drained of blood.”

In most hot climates it appears that in many cases, abscesses of the liver are connected with dysentery, &c. About 11 years ago, Dr. Catteloup, of the French Army of Algeria, reported that in 157 deaths in his hospital practice, 20 were affected with hepatic abscesses. In none of these cases had the individuals been less than one year resident in that region; many of this number had had either diarrhoea or dysentery. Writers on the diseases of India report similar results. In New Orleans, the connection between hepatic abscess and dysentery is by no means satisfactorily established. Nor is there, according to the writer's experience, a higher ratio of hepatic maladies in the comparatively hot climate of this city, than in the cooler regions of Western Virginia.

The gall-bladder is liable to various lesions, often difficult to detect—biliary calculi, inflammatory affections, œdematous infiltration of the coats and ducts of this viscus or dropsy, fibrinous and albuminous effusions into its sack, &c.

A case of chronic hepatitis, with a fistulous opening through the abdomi-

nal walls, was, some years ago, admitted into the Charity Hospital of this city. The patient wore a plug or compress, which he removed daily or oftener, in order to empty the sacculated sinus of its purulent accumulations.

The sack of the hepatic abscess, particularly in chronic cases, has usually a grayish, cheesy, rough, bark-like surface within, with a much firmer, sometimes an almost cartilaginous, out-lying stratum of a grayish bloodless appearance, beyond which is found a reddish, firm, inflammatory zone, deeper in the parenchyma of the organ.

It is reasonable to suppose that this concrete, unyielding, semi-cartilaginous firmness, and the consequent non-approximation of the walls of a protracted hepatic abscess, is one of the principal barriers to the healing or cicatrizing process.

Turgescence or sanguineous congestion of the liver may be, to some extent, simulated in the recently dead body, by the mode of procedure in the post-mortem examination, without the existence of any absolute abnormality, thus:—let the liver be dissected *in situ* before any other organ or great blood-vessel is removed or incised, whereupon, pounds of blood may often be discharged conformably to the law of gravitation, not to mention endosmotic and exosmotic actions in this and other adjacent organs having intimate membranous, cellular, and vascular connections; while on the other hand, the dissection and removal of all the organs in the abdomen except the liver, will prevent the apparent sanguineous engorgement alluded to, and even drain the liver, giving it a bloodless appearance.

In many cases, soon after death, endosmotic action transports the bile from the gall-bladder into the subperitoneal or cellular tissues, producing extensive yellow, green, and black discolorations upon the concave surface of the liver, and throughout and beyond the hypochondriac region, which have been mistaken for grave pathological alterations.

#### ANATOMICAL ILLUSTRATIONS OF HEPATIC DISEASES.

*Hepatic Abscess terminating in Fatal Consumption.*—The details of the following case are omitted with few exceptions. The next case is supposed to illustrate the anatomy of this.

On the 1st of December, 1833, I was called to see J. Y. D., a lawyer, a native of Virginia, aged about 25, a resident of Clarksburg, in the State aforesaid. Mr. D. who had not been in good health for several years, was neither robust nor fleshy, had a sallow appearance; topor of the bowels; slight pains and tumefaction in the liver; a little cough with expectoration of mucosity; respiration little disturbed; pulse full and hard; tenderness upon pressure over the liver; an occasional

transient chill, &c. Viewing the case as a sub-acute hepatitis in an enfeebled constitution, active remedies were nevertheless cautiously used, as blood-letting, mercurials, cathartics, diaphoretics, occasional opiates, antimonial pustulations, &c. In three weeks a great apparent improvement had taken place, but in the fourth week tumefaction and burning pains took place in the liver; respiration became much embarrassed, wheezing, &c.; pulse excited, hard and small; suddenly, at 4 A. M., on the 27th, he expelled through the trachea, with a strangling cough, about a quart (as he estimated) of thick, yellow, foetid pus, with some frothy mucosity.

January 21st, 1834; has had for several weeks night sweats, irregular expectorations, frequent cough, pulse 110 to 130; healthy alvine evacuations, and a good diet.

In February his health improved considerably, excepting as it regarded pulmonary symptoms; the expectoration however had lost much of its purulent character, which was replaced by dense fibrinous and mucous masses, several ounces of which were sometimes expelled in one paroxysm of coughing.

In March, April, and May, his case assumed the form of pulmonary consumption, from which, a few months later, he died.

The following case though more rapid in its march and less identified with pulmonary consumption in its termination, is probably a type of Mr. D.'s case some months before the hepatic were replaced by the pulmonary symptoms.

S. H., born in Germany, aged 46; resident in New Orleans 12 years; grocer; sick 13 weeks; treated of late with palliatives, as morphine, full diet, &c.; diagnosed as phthisis; suffered but little pain; for several days before death; coughed up pus and blood estimated by his physicians at 2lbs. daily; stools natural; intellect little affected; right hypochondrium tumefied.

Post-mortem examination fifteen minutes after death. *Body:* emaciated; chest expanded; muscles attenuated; a cicatrix was noticed from an operation for inguinal hernia.\* *Head:* Serosity in the arachnoidal sack and in the ventricles of the brain, about 6 ounces; sub-arachnoid vascularity and infiltration with an albuminoid exudation.

*Chest and Abdomen:* heart large yet attenuated; left lung natural, the right almost totally disorganized; its periphery universally adherent to the costal pleura; its central portion comprehending nearly all of the parenchyma was a vast cavity filled with nearly 3 lbs. of pus; this sack communicated with one equally large in the right lobe of the liver, the

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\* An apothecary acquainted with H., says that this operation was performed on this subject by the late eminent Dr. Luzenberg.



perforation through the diaphragm being large enough to admit the fist; most of the bronchial tubes destroyed; pus in the cavities, flaky and thick. The hepatic sack or cavity having been washed out with a powerful stream of water, was found to be of a dull white color, very rough, like the bark of an oak, resting on a base half an inch thick, which was bloodless and almost cartilaginous in consistence; the residue of the liver pink-red, and loaded with blood which flowed freely from every incision; the gall-bladder contained a yellow mucosity. Some portions of the mucous membrane of the colon and rectum, thickened and reddish; the small and large intestines loaded with fæces altogether natural in color, consistence, &c.

*Hepatitis. Abscess.*—The following summary of a post-mortem examination, was made only in part by the writer.

A middle-aged man who had been long treated for a bilious diarrhoea, and bilious vomitings of a yellow color, died July 30th, 1843. Liver—double size; its parenchyma nearly black; incisions gave a smooth, dark, glossy surface; the organ had a central abscess, the sack of which contained several ounces of pus; the gall-bladder contained five or six ounces of yellow, normal bile.

Other examples of internal abscess of the liver, which I have witnessed, might be related were it necessary, most of which had eluded detection on the part of the medical attendants.

In diagnosing abscesses, particularly upon the inferior or concave aspect of the liver, it is very important to curve the body forward, so as to relax the abdominal muscles—a posture which, indeed, the patient generally assumes, as being the least painful, and one favorable for detecting the deep-seated fluctuation of circumscribed abscesses.

Years ago, there was a patient who remained a considerable time in the Charity Hospital, suffering from an obscure malady, the nature of which gave rise to an extraordinary, perhaps unparalleled, diversity of opinion; whereupon Mr. Marks, then resident student in the hospital, determined, as he said, to obtain and record the opinion of all the physicians in the city, as far as possible. Having been several times requested to diagnose the case, I went up stairs for the purpose with the late Prof. Carpenter, the student aforesaid, and others. I pronounced the case at once, abscess of the liver—an opinion which Mr. M. declared had not been previously given by any one. The patient after lingering for some time died. The post-mortem examination, which however, I did not witness, confirmed my diagnosis fully, as physicians, students, and other witnesses affirmed.

*Hypertrophy of the Liver.*—1842, July 25th. L. C., born in Italy, aged 28, resident eight years; sick one month; early history imperfect;

variously diagnosed by physicians; took but little medicine during the last week before death; complained of little except debility; was free from delirium, vomiting, diarrhœa, and dysentery.

Dead half an hour—body warm, supple; skin and adipose tissue of a light bronze or lemon color, less marked in the latter; free from emaciation being rather fat; the inferior portion of the abdomen concave; no cadaveric injections or discolorations; free from dropsical effusion in the cellular tissue.

*Brain*.—Natural in consistence but anæmic;  $2\frac{1}{2}$  ounces of serosity, chiefly in the ventricles.

*Right Lung*.—Collapsed to one-eighth of its normal size; the pleural cavity contained from three to four ounces of serum; left lung extensively adherent to the pleura costalis by white tissue, free from indication of recent inflammation.

*Œsophagus*.—Blanched; mucous membrane of the stomach of a pale claret color; cœcum thickened, its mucous membrane ulcerated as large as a dollar; bowels empty excepting a few ounces of colorless mucosity; mesenteric glands slightly enlarged; omentæ and mesentery rather loaded with fat, and somewhat injected. The cava, vena portæ, and azygos much distended with pink colored blood, forming soft coagula and abounding in serosity.

The liver was of a pale bronze color, much indurated; its parenchyma anæmic, discharging a little pale, lemon colored, oily liquid; it extended from the right to the left side of the abdomen, descending towards the pubes, and was supposed to weigh 15 pounds.

The most extraordinary instance of hypertrophy of the liver I have ever seen, was in a child in Virginia, aged three or four years, whose liver, at the time of its death, must have weighed as much as the one-third of the residue of its emaciated body.

*Hepatitis, with numerous Complications*.—A. P., a white female, unmarried, aged 35, last from Red River, (Louisiana;) resident and sick in New Orleans five weeks. For one month before death her case had been variously diagnosed by physicians, as jaundice, typhoid fever, meningitis, hepatitis, yellow fever, gastro-enteritis, dysentery, &c.

The patient, who was often delirious, died, July 21st, at six, A. M., 1843; six hours after which, the post-mortem examination was made.

*Body*.—Large, warm, yellow, without rigidity, abounding in fat, which latter varied from one to two inches in thickness on the chest and abdomen; muscles large, firm, but somewhat pale; bed-sore upon one buttock; slight abdominal convexity; no petechial or sanguineous discolorations.

*Head*.—Serosity two ounces; arachoid and pia mater increased in thickness and tenacity, with considerable vascularity and sanguineous injection in the latter.

*Chest*.—Left lung engorged and adherent to the costal pleura; right side of the heart distended with coagulated blood, together with yellow fibrinous concretions or polypi.

*Mouth*.—Pale; tongue clean; gullet natural.

*Abdomen*.—Omental tissue loaded with fat; the stomach contained a dark, muddy liquid; the cardiac portion of the mucous tissue as large as the hand, softened almost shredy, with faint, dark arborizations; the large intestine from the cæcum to the anus was of a flesh color, and grew thicker progressively, chiefly in the mucous coat, the whole being augmented in weight from four to six times, containing a thin, yellow liquid; kidneys small and somewhat indurated; spleen extremely supple and tough; liver enlarged three to four times, adhering by several firm bands to the diaphragm, its capsule strongly adherent to the parenchyma; the parenchyma consisted chiefly of innumerable yellow grains or nodules, from the size of pearl barley to that of the garden pea; this whole organ was rather firm, yet inclining to flexibility and tenacity, falling short of cirrhosis in hardness; the granular, fat-like matter, intersected or conglomerated by pale whitish tissue, did not grease the knife, nor discharge any oily liquid as in fatty livers. The gall-bladder contained a pale, thin, ropy liquid; ducts pervious. The ovaries had degenerated into two conical, oblong, smooth, symmetrical sacks, like the gall-bladder, their apices pointing towards the womb along the fallopian tubes—that on the right side contained about two and a half ounces—that on the left about one ounce of liquid like two kinds of black vomit—the tobacco-juice variety, and the sedimentary, charcoal-like matter in minute division and flakes.

The auscultatory history in these cases is so imperfect that all mention in this behalf is omitted.

The physiologist will find in these cases much not accounted for as it respects the function of the liver in regard to the secretion or excretion of bile, seeing that in several fatal cases with great disorganization of the liver, the stools were healthy in color, consistence, scent, &c. Neither in the pus discharged nor in that found encysted, were effusions of bile noticed.



ART. VIII.\*—*Iodide of Quinine in Periodic Fevers, and in Scrofulous Subjects; translated from the Revue Thérapeutique; with Remarks on the Intermittents of Louisiana:* by M. MORTON DOWLER, M. D., New Orleans.

MR. PAURA, Professor of Chemistry at Naples, proposes a new preparation, the *Iodide of Quinine*, in cases of intermittents, which appear to resist the ordinary anti-periodics, under the influence of a scrofulous constitution. It is especially under the two-fold influence of the alteration of the blood, determined by the paludal miasms, and the scrofulous condition of the organism, that we see the glandular organs of the abdomen destined to the depuration of the blood of the vena porta, become engorged, and hypertrophied. That an agent combining the virtues of quinine and iodide, would act in the most salutary manner in cases of this kind, will readily occur to the physician; and this has been realized by the experiments of Dr. Giuseppe Manpedonia, (of Naples.)

This physician has seen the iodide of quinine in the quantity of from 3j to 3ij daily, completely triumph over such intermittents.

*Remarks by the Translator.*—The intermittents of Louisiana, considered in their immediate character, are not invested with the formidable and obstinate traits which mark the intermittents of the North; not being either so protracted in their continuance, so violent in their paroxysms, nor so intense in their febrile action. A Northern intermittent will, either with or without treatment, often continue to appear and disappear during the space of many months; sometimes, indeed, appearing but little amenable to medicine, and falling into the hands of quacks and conjurers. During two years practice in the West, twenty years ago, we prescribed for a man who assured us that for the space of twenty-five years he had suffered pretty uniformly from a quartan ague, at all seasons.

These northern intermittents are the great founders of chronic disease; and they rarely take their leave till they have left their mark on some organ or organs of the body.

If, however, our Louisiana intermittents are not invested with the persistence, violence, and intractability of those of the North, they are, nevertheless, extremely unreserved in their depredations on the organism during their transient and apparently mild rule. Here, after the patient has suffered no more than three or four paroxysms, he will not unfrequently put on a most cadaverous, anæmic, appearance, and become a fit subject for the various forms of consecutive disease, which, from

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\* This paper, contributed to this Journal as a translation, belongs, more properly to the original department, as the reader will see.—*Ed. N. O. Med. & Surg. Jour.*

this cause, we have often seen realized. We have in several instances witnessed the rapid development of phthisis pulmonalis, evidently resulting from this superinduced condition of the organism.

It is hence highly important that our intermittents should be promptly treated; and amongst the numerous indications which individual cases may tend to diversify, are the two following, namely:—first, to quickly put an end to the paroxysms; and secondly, to remove the anæmic deterioration inseparable from the disease, and to arrest its further development. The first may be effected by quinine; though this salt has been too generally regarded as a panacea in this disease, from its priceless value as an anti-periodic. Conjointly with quinine, with a view to both of these indications, the bark itself should be resorted to, and one of the best forms for administration will be found in the compound infusion, according to the U. S. P., (with the substitution of the yellow bark,) taken in doses of ℥j–iij, with ℥i–iij of Huxham's tincture mixed together at the time of taking, to be repeated every three or four hours. Or the extract of bark may be taken in large doses, at the same intervals. In the meantime, with a view to the second indication, the pulvis ferri should be administered in ordinary cases two or three times a day, in combination with aromatics; or other ferruginous preparations may be prescribed. In the meantime, complications may arise demanding the administration of iodine or the iodide of iron. However promptly the first indication may be fulfilled, it is not the less necessary to continue the treatment in view of the second, keeping constantly in view not only the general aspect of the patient, but all tendency to localization of disease. We have never had access to M. Paura's new preparation of quinine, but reasoning *à priori*, we should judge it to be well adapted to a class of cases which occur in our latitude. Upon the whole, we have no reason to congratulate ourselves upon the "mildness" of our intermittents. They are treacherous to the last degree. In constitutions hereditarily predisposed to pulmonary consumption, their effects are disastrous, and dropsy, albuminuria, and all kinds of visceral derangements and engorgements, regularly supervene as sequelæ of our intermittent fevers.

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#### ART. IX.—Epilepsy.

THE following consultation letter, and the answer to it, were written without any view to publication. Upon second thoughts, it was concluded to publish both, since they relate not to medical curiosities but to every-day

cases, which above all others baffle the remedial resources of the physician, and which have hitherto repelled and beaten back pathologists who have attempted to discover their causes, laws, anatomical characters, and curative treatment.

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*May 12th, 1856.*

BENNET DOWLER, M. D.:

DEAR SIR,—I have under my charge a patient affected with epilepsy, arising from spinal irritation, about whose case I wish to get your opinion as to the proper course of treatment. The patient is a gentleman about 35 years of age, delicately made, of rather feeble constitution, a widower for three years. When about 15 years of age, he was afflicted with what was called scrofula, affecting the left temporal bone; the bone became carious, and a number of pieces were discharged. The disease was cured, though a considerable depression yet remains in the bones showing the seat of disease.

Some 10 or 12 years ago, he became affected with rheumatism, from which he suffered very severely. The rheumatism has continued occasionally to attack his joints, mostly the knees and hips ever since.

Some four years ago he first noticed that while engaged in conversation, his intellect became confused for a moment or two; this passed off without exciting his alarm. A few weeks afterwards, he had another similar attack; from this time the attacks would occur sometimes every few days, and at others a month or two would elapse without anything of the sort.

About a year ago, after having traveled several days, exposed to the rays of the sun, to which he was not accustomed, upon awakening in the morning from sleep, he felt singularly, and in a few moments passed into a state of unconsciousness, which continued some 10 or 15 minutes. The physician who was called to see him, found excessive tenderness upon pressure made over the two lower cervical, and several of the upper dorsal vertebræ, for which the patient was bled, took an active cathartic and had counter irritants applied to the spine. He was able to travel in a few days.

The slight attacks from which he had previously suffered, continued to return. About a month ago, after having been similarly exposed to the fatigue incident to traveling on horseback, without any premonition, before he had retired to bed at night, he had another attack of the convulsions as before described, though it continued longer, and seemed more severe than the one which he had had a year previously. The spine was similarly affected; counter irritants were again applied, and have been continued to the present time. The patient has also been



taking a pill composed of blue mass, comp. ext. colocynth, and ext. of hyoseyamus, and occasionally used, during the last month, a shower bath.

The attacks of rheumatism to which he has been subject, have been violent in their onset, and have subsided suddenly, and I am inclined to think that it is a metastasis of these attacks which have produced the two violent convulsions, and it may be that they have also produced the slight confusion of intellect from which he has suffered. I shall be most happy to get your opinion as to the appropriate course of treatment to be pursued in this case. \* \* \*

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NEW ORLEANS, May 26th, 1856.

\* \* \* \* \* M. D.

DEAR SIR,—I have the honor to acknowledge the receipt of your favor of the 12th inst., asking my professional advice in the case of the gentleman affected with epilepsy, now under your charge.

In any case I should be greatly embarrassed in giving advice in relation to this malady, and particularly in a highly complicated case, which, as is evident from your letter, has been treated by yourself with discrimination and ability.

The fundamental point I wish to express is my approval of your therapeutic measures, and my hope that you will, regardless of routine, formulæ, and dogmas, vigilently, courageously, and in full faith, direct your attention to preventive measures, and to such premonitory and actual symptoms as may occasionally arise.

In so far as the disease is not hereditary and idiopathic, there is ground for hope. Thus a scrofulous diathesis, upon which rheumatism has been planted, may have been the foundation of the occasional and infrequent epileptic seizures you mention—excited, perhaps, not constitutional.

The caries of the temporal bone is very suggestive of a possible thickening of the cerebral membranes corresponding to that region where "*there is still a depression,*" not to dwell on the *depression itself*. This is only a conjecture. I have sometimes found without any osseous lesion, a rough, granular deposit in the sub-arachnoid tissue giving it a grater-like surface.

The rheumatism (whether general, articular, or spinal,) with its accompaniments is another disturbing antecedent or cause to be combatted as the exigencies of the case may require.

Incipient spinal meningitis, myelitis, or a more external inflammation in the bones, intervertebral substance, muscles, fascia, &c., which you have designated by a more general term, "*spinal irritation,*" are all

disturbing or exciting causes, and may reasonably be supposed to be more amenable to treatment than constitutional epilepsy.

In treating these complications, and (in this case) their apparent *metastases*, no invariable rule can be safely enunciated. The predominance of rheumatism might require decisive doses of opium—scrofula, iodine, the ferruginous preparations, particularly in the anæmic condition, &c., all of which you know very well.

In the treatment of idiopathic epilepsy, *per se*, nothing appears to have been established beyond all peradventure. It is, therefore, proper to appeal as far as possible to analogous diseases for whatever light they may afford. Yet little is thus gained. Convulsions simulating the epileptic will often occur from apparently opposite conditions, as exhausting hæmorrhages, blood-letting, anæmia, hyperæmia, &c.!

Where no epileptic preludes exist, the expectant method may be the most expedient in the present state of our knowledge or rather ignorance. It is here that hygienic measures triumph over the empirical administration of drugs.

If I have dealt in generalities—if my views are not precise and definite—if I cannot indicate a sure and satisfactory treatment, the inherent difficulty of the case must plead in my justification. Yet, I console myself with the belief that the patient has a competent medical adviser, and that I cannot suggest a mode of treatment better than that which has been adopted.

I am, dear doctor,

Yours truly,

B. DOWLER.

## PROGRESS OF MEDICINE.

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ART. I.—*Therapeutic Results in the Children's Hospital of Munich, under PROFESSOR HAUNER. Reported in the Journal f. Kinderkrankheiten; 1855. Translated from l'Union Médicale for March, 1856: by M. MORTON DOWLER, M. D., New Orleans.*

THE distinguished Bavarian Professor has briefly recited his own observations touching the action of medicines by him employed in diseases of children. His judgment is of great value, not only from his eminent ability, but from the fact that the hospital of which he is at the head, receives annually more than 2,000 sick children; and during many years he has occupied the post of chief physician.

He sets out by recommending *vaccination* in cases of *nævus maternus*; and recommends the inoculations to be performed not only all over the surface of the *nævus*, but even on the sound skin on the margin of the part affected.

1. *Chlorate of Potassa*.—Employed for many years with constant success in *stomatitis* and *ulcers of the mouth*, and in more than 70 cases. The results are wonderful; for in four hours the penetrating, disagreeable odor of the mouth disappears, and the cure is rapid. It is very valuable in diphtheritic affections of the mouth and throat, and in mercurial ulcerations; but its value is less constant in these cases:—*R. Potas. Chlorat.*, ʒss–ʒj; *Aq. Distillat.*, ʒiij–ʒjv; *Syrup Alb.*, ʒss; *m. ft. mist. S.* To be used in 24 hours.

2. *Cod Liver Oil*.—Has been given in at least 200 cases of rickets, of every form; all of which have been cured. The other hygienic and medicinal means, as baths, lotions, etc., have not been the principal curative means; for, employed without the oil, the cure has not been effected. The oil is given in doses of from three to four dessert spoonfuls a-day. Gastric and diarrhoeal affections, if existing, must be treated before giving the oil. In summer, and during warm days, it is much less easily supported than in winter, and in cool weather.

3. *Tincture of Artificial Musk*, (*Musc Ambrée*.)—In laryngeal spasm, uncomplicated. Nothing is said of either dose or formula. Employed with constant success in more than 30 cases.

4. *Arsenic*.—*Fowler's Solution*, in various cutaneous eruptions; as the



different forms of eezema, prurigo, psoriasis guttata, etc. The constitutional origin of these affections, is first sought out, and the treatment governed by the same. Those which resist the ordinary rational and empirical treatment, are amenable to arsenic. *R. Liq Potas. Arsenical.*, ʒj; Aq. Destil., ʒss; S. Take five drops, at first twice, and afterwards three times a day. At the expiration of one month, the Fowler may be given pure. Fatty and impure aliments must be avoided, and the patient must be warmly clad. Baths hasten the cure. No serious result has been observed from the medicine, but the existence of diarrhœa, either contra-indicates the use of the agent, or neutralizes the result.

5. *Nitrate of Silver* in the decline of croup, rubeolic cough, *inflammatory angina*, and in ophthalmia of the new-born. (*Abortive treatment.*)

6. *Sulphuric Acid*, prepared; *Elixir of Haller*.—This medicine, so readily taken by patients of all ages, has rendered the greatest service in typhoid, and exanthematous fevers; in diseases of the blood and of the vascular system, appertaining to scorbutic affections, especially in the *Spotted Disease of Werlhoff*. It is given with other appropriate remedies, by adding from ʒss. to ʒj of the medicine, to from ʒjss to ʒjvss. of the syrup of marsh-mallows, and adding a table-spoonful of this to the common drinks.

7. *Arnica*.—M. Hauner having witnessed the abuse of this remedy at the beginning of his career, completely laid it aside. Nevertheless, of late, he has used it on the recommendation of Dr. Schneider in three cases of *serous exudation*, in children notably scrofulous, but free from any specific dyscrasia. The first two were children brought to the hospital with pleuritic effusions, which had been misunderstood, having been regarded by Dr. S. as purulent. The debility was so great that thoracentesis could not be ventured upon. The ordinary treatment was unavailing. A complete cure was effected by arnica. M. Hauner obtained similar results in the city, in case of a woman of twenty years of age. The third child was attacked with an arachnoidian effusion, with well marked symptoms; and which slowly disappeared.

In all these cases perseverance is requisite; for those affections do not rapidly yield. These four cases do not afford sufficient data on which to determine the value of arnica; but they afford new exemplifications of its value. Take of flowers of arnica ʒss–ʒj, or ʒjss, to make from ʒij to ʒijss. of infusion; to which ʒss of Syrup of Senega is to be added; and one or two dessert-spoonsful are to be taken every two hours. The woman took ʒss of the flowers.

8. *Chinchona*, *Quinine*.—In intermittent fevers, used both internally and endermically. There exists yet another form of fever, nearly

approaching typhoid, characterised by feebleness at the onset; and which calls for the employment of quinine. This is the *stupid typhoid fever* of the ancients; the *remittent fever of children, without localization*, of many authors. The diagnosis of the disease is very difficult. It is wanting in the usual dry and red tongue, the febrile pulse, the abdominal sensibility, especially the pain in the ilio-cæcal region, the distension of the belly, the typhoid stools, etc.; indeed, almost all the signs which characterise typhoid. It is not a cerebral affection; for the history, the primary symptoms, the condition of the eyes, the absence of vomiting, the state of the abdomen, the position of the patient, the intervals of relief, all show the contrary. This disease is no more nor less than a peculiar species of nervous excitation in excitable children, which is most frequently found during the years of evolution. If unfortunately we have employed antiphlogistics, or purgatives, or if we have refrained from treatment, there results a long continued disease, wasting the patient with hectic fever; or, indeed, the disease may localize itself on the brain or lungs, according to the individual predisposition of the patient; and carry off the child by a secondary affection. Quinine is the true panacea against this fever.

Quinine has the most salutary influence in hectic fever, even when owing to the existence of tubercles. M. Hauner cites cases of six girls, from six to ten years of age, consumptives, situated under unfavorable circumstances, in which the cough, sweats, emaciation, (and pulmonary symptoms?) which had resisted other means, disappeared under the use of quinine. If quinine rarely cures such cases, it often gives relief.

Many of the neuroses, and sporadic affections, are also cured by quinine.

In *anæmia* of children, and *atrophy* from bad diet, etc., without localization or disorganization of an important organ, the extract of chinchona, cold prepared by maceration, renders the greatest service:—  
R. *Ext. Chinchonæ*, gr. jvss-viij; *Aq. Flor. Anthemidis*, 3x-3ij; *Syrup Cort. Aurant.*, 3ss; S. Two dessert spoonfuls every two or three hours.

9, 10. *Chamomile*, and *White Decoction*.—The first in an especial manner relieves colic brought about by an accumulation of gas in the intestines, and it acts as a carminative. The second is a pure mucilaginous substance, indicated in case of bronchial and pulmonary irritation, from what cause soever it may originate. Chamomile is generally employed in *baths*, containing half a handful, or in *injections*, one to two ounces of the medicine infused in from two to three ounces of water.

11. *Columbo*.—In habitual diarrhœa of children, and adults. In children, improper nourishment gives rise to a catarrh of the small intestines, or a dysenteric colitis, and from the same cause there is finally

developed a state of laxity, and atony of the intestines, manifesting itself by a diarrhoea which is sometimes serous, at others lienteric, which ends in atrophy. This condition does not yield to either calomel, nitrate of silver, or rhubarb; but is sometimes cured by the mild, ferruginous preparations, but especially by the prolonged use of columbo.

*R. Rad. Calumbæ*, gr. viij-3j; *Aq. Destil.*, 3j-3jss.; *coque et adde*, *Syrup. Cort. Aurant.*, 3ss. *S. Take two dessert spoonfuls every hour.* Or, thus: *R. Ext. Calumb.*, gr. jvss.-gr. vj; *Aq. Cannel.*, 3j-3jss; *Syr. Cort. Aurant.*, 3ss. *S. To be taken as the preceding mixture..*

12. *Iron*.—M. Hauner employs iron but little. The tincture of the malate of iron, is prescribed in cases of *anæmic* conditions, when there is absence of diarrhoea, febrile excitement, and dyspepsia. The syrup of iodide of iron, has proven advantageous in certain cases of scrofula, in cases of extremely feeble children. Thin attenuated children having a predisposition to pulmonary scrofula, do not well support it, the cough and irritability of the lungs being aggravated by its use.

13. *Jalap*.—One of the best purgatives in cases of children. Children affected with scrofula, ophthalmia, chronic cutaneous eruptions, intestinal worms, slow and irregular digestion, etc.; children of a sluggish habit, large belly, dry skin, slow and indisposed to action, are much more speedily cured when the treatment is begun by an active purgative of jalap and calomel. Neither calomel alone, nor senna, nor aloes, is capable of exciting evacuations as abundant, and as derivative as jalap.

14. *Ipecacuanha*.—As an emetic, its efficacy is well established in many diseases, as *whooping-cough*, *catarrhal fevers*, in cases of very excitable feeble children, predisposed to diarrhoea. In small doses this root renders the greatest service in cases of *bronchial catarrhs*, and spring and autumnal catarrhal affections accompanied with great irritability of these organs, with cough, mucous *râles* in the bronchial tubes, and difficult expectoration, especially when these conditions are complicated with intestinal catarrh.

*R. Rad. Ipecac.*, gr. ij-gr. jv; *Aq. Bullient.*, 3jss.-3ij; *Macera et Cola*; *dein adde Syrup Alb.*, 3ss. *S. Take two dessert spoonfuls every two hours.*

*R. Rad. Ipecac.*, gr. ij; *Rad. Rhei*, gr. jv; *Aq. Bullientis*, 3jss; *Macera et Cola*; *adde Syrup. Senegæ*, 3ss. *S. Take a dessert spoonful every two hours; or give in powder, from gr.  $\frac{3}{4}$  to gr. jss, with sugar and milk every two hours.*

*Ipecacuanha* is one of the best remedies in *diarrhæas*, frequent with young infants in the hot season. (Summer diarrhoea, dysenteric diarrhoea.) An infusion of 3jss. to 3ij made with gr. viij of *Ipecacuanha*, with



the addition of ℥ss. of the Syrup of Poppy, given in doses of two dessert spoonfuls every hour.

15. *Creasote*.—Extraordinary means are to be employed only in extraordinary cases, in which the diagnosis is not positive, and in which we are compelled to treat for the more prominent symptoms. To this category belong two cases of *vomiting*, which, resisting every other means applied, yielded to the following portion: *R. Creasoti, gutt ij; Aq. Destillat., ℥jss. Syrupi Albi., ℥ss. S. Take two dessert spoonfuls every hour.*

16. *Aqua Lauro-cerasi*.—The organism of children is subject to revolutions in cases of irritable subjects, so often badly nourished and badly treated, and to subacute and congestive affections, which not unfrequently manifest themselves in the head, chest, and spinal marrow, with symptoms of nervous irritation, simulating to a certain extent, cerebral hyperæmia, pneumonia, carditis, myelitis, of which diseases there are only wanting the local pathognomonic signs. The spasmodic pulse, the extreme irritability, the dry skin, the heat, the general aggritation, the violent palpitations of the heart, the fatiguing dry cough, under the influence of the *Aq. Laur. Cerasi*, are subjected to a calnative which is unequalled in efficacy by any other medicine. These conditions are moreover frequently met with. This water is still more efficacious in the spasmodic and convulsive cough of children, and in that of consumptives. *R. Aq. Laur. Cerasi., gutt. vj-x-xx; Syrupi Albi, ℥j; S. Take half a dessert spoonful every two hours.*

17. *Opium, Morphine*.—These agents are not frequently employed by M. Hauner. In the *diarrhæas*, he treats with opium only those which are the most obstinate; and he uses it in dysentery. He administers it in very minute doses, combined with calomel. *R. Pulv. Opii, gr.  $\frac{1}{30}$  -  $\frac{1}{15}$ ; Calomel, gr.  $\frac{1}{15}$  -  $\frac{1}{5}$ ; Sacchari Lactis, gr. viij; m. ft. Pulv. S. A powder such as this every four hours.*

Its use as a calnative is more general; as in *colic pains*, in neuralgias in *insomnia* and *nocturnal cough* of consumptives, (morphine) the cough of the nervous period of the whooping-cough, in non-irritable and phlegmatic children. As an external application, laudanum enters into the composition of numerous collyrii; is used for the dressing of numerous atonic ulcers, in which it favors the formation of healthy granulations; is used in *spina ventosa*, *caries*, etc.

18. *Lichen Islandicus*.—Employed as a tonic in mucous affection of the lungs.

19. *Walnut Leaves*.—*Feuilles de Noyer*.—Long experience has proved to M. Hauner that in *scrofulous affections*, cod-liver oil, so generally recommended, is without effect; that iodine, so very efficacious in

certain diseases, the chloruret of barium, antimonials, etc., stand at zero, whilst the walnut leaf, newly dried, shows a decidedly advantageous action. (We do not concur in this condemnation of cod-liver oil; nor as to the infrequency of the good effects of iodine in these affections.—*French Translator.*) (We have derived excellent results from iodine administered simultaneously with iron.—*Am. Trans.*)

The principal indication for the use of walnut leaves, is in cases of torpid, sluggish, and inactive children, in scrofulous ulcers, otorrhœa, chronic, scrofulous, cutaneous eruptions, in atony and engorgements of the lymphatic system. It need scarcely be remarked that the proper hygienic measures ought to be concurrently adopted.

20. *Rhubarb*.—This root will ever find a place in the treatment of children. In young children with affections of the digestive organs, characterized by a tardy expression of the meconium, by icteric symptoms, by non-febrile dyspepsia, etc.; in short, conditions known under the names of apepsy, flatulence, acidity, gastricism, caused by feebleness of the digestive organs, the consequence of bad alimentation, are cured readily with one or two dessert spoonfuls, daily, of syrup of chickory with rhubarb. But it must not be given in febrile affections, and in diarrhœa, unless they be purely gastric. At a more advanced age, we increase the activity of the syrup of rhubarb, by adding to it the aqueous tincture of this substance. This combination is prescribed in affections of the liver and spleen, and to close the treatment of intermittent fevers, etc. Infusion:—*R. Rhei. Contus.*, gr. ijss—gr. viij; *Aq. Bullientis*, ℥jss—℥ij; *macera et cola*. Solution of Extract:—*R. Ext. Rhei*, gr. ijss—viij; *Aq. Faniculi*, ℥jss—℥ij; *m. ft. solutio*—this being one of the best stomachics for children artificially nourished.

21. *Senna*.—With children, rhubarb ordinarily supercedes senna; nevertheless, cases occur in which the more energetic action of the latter is to be preferred; and we generally employ it in the form of the Vienna Laxative. Such cases are cerebral inflammations, and congestions in torpid children; obstinate constipation, having its origin in gastric causes, helminthiasis, the onset of gastric fevers, and febrile exanthemata, especially scarlatina and variola, in which it is well to avoid calomel.

22. *Senega*.—In *Croup*, neither at its onset nor at its acme, has it any favorable action; but it is useful at the period of resolution of the disease, and in consecutive affections; it acts well in the laryngitis which follows measles. In the secretive period of *whooping-cough*, in *chronic bronchitis*, with abundant and tenacious accumulation of mucosity, in catarrhal and typhoid pneumonia, and especially in rachitic infants.

The decoction may be prepared by boiling from gr. viij to ℥jv of Senega root, in a sufficient quantity of water, so as to make from ℥jss to

ʒij of the decoction, to which may be added ʒss of the syrup of senega, or the medicine may be prescribed in the following form.—*R. Syrup Senega, Syrup Ipecac., Syrup Glycyrrhizæ, āā., ʒss. S. Take two dessert spoonfuls every hour or every two hours.*

22. *Valerian Root, Carbonate of Magnesia.*—These two agents are much employed; especially in the form of a compound powder, much used in Germany, but almost unknown with us. It is called the children's powder, the *pulvis puerorum*; for the preparation of which there are various formulæ. The formula preferred by M. Hauner, is according to the manner of Hufeland, except that the oleo-saccharum of fennel is superceded by the sugar of milk. The following is Hufeland's formula:—*R. Magnesie Carbonatis, part. xvj; Radicis Rhei, part. vj; Radicis Valerianæ, part. j; Fœniculi Oleo-sacchari, part. viij; m. ft. pulv. Let there be taken, according to the age, what will lay at two or three times on the point of a penknife, daily.* However irregular this compound may seem, it is, nevertheless, very valuable; and is very frequently employed. The valerian, by its essential oil, its extractive principle, and its peculiar acid, acts as a tonic on the nervous system; while the magnesia as an antacid, corrects the acridity of the gastric and intestinal secretions: the part which is acted by the rhubarb is well known.

24. *Mercury, principally Calomel.*—The action of mercury is especially resolvent, promoting the secretions; and hence its frequent employment with infants, in which the diseases of organic life are so numerous. M. Hauner especially prescribes calomel in cases of *cerebral affections*, in *idiopathic meningites*, hyperæmia occurring at the period of dentition, in robust children, in *convulsions*, eclampsia, caused most frequently at that period, by cerebral irritation. In these cases the calomel is given in free doses, say from gr.  $\frac{1}{2}$ , to gr. jss.

The reputation which mercury formerly possessed in cases of *hydrocephalic diseases*, has vanished before a more correct diagnosis of such cases. The granular affections of the meninges and their result, acute hydrocephalus, are neither cured by calomel, sublimate, nor any other means; and the reported cure in such cases, is founded in error.

Calomel renders important service in all inflammations in which there is a tendency to plastic deposits, and exudations into the internal cavities.

Its favorable action is shown further in *intestinal catarrh* of children, attended with pain, great sensibility, and distention of the belly, with diarrhœa, sometimes abundant, but more frequently moderate. Secondary cerebral symptoms often complicate such cases, sometimes with somnolence and heaviness of the head, at other times with crying and insomnia, attacking especially children badly nourished and at the same tim



suffering from dentition. Emaciation and leanness do not contraindicate calomel, though it is important to bear in mind the treatment appropriate to each special case. In affections of the large intestines, characterized by frequent evacuations, with tenesmus and violent, painful efforts, accompanied with cerebral symptoms, often convulsions, even to tetanic cramps, in this true *dysentery*, calomel is the agent specially indicated; and will alone effect a cure. We give from  $\frac{1}{6}$  to  $\frac{1}{2}$  a grain for a dose, every four or five hours, alone, or associated with feeble doses of opium, say from  $\frac{1}{30}$  to  $\frac{1}{15}$  of a grain.

Numerous children have been brought to the hospital suffering from the abuse of the infusion of poppy heads. Insomnia, wasting, dryness of the skin, and trembling, showed themselves, owing to narcosis and hyperæmia of the brain. Calomel in the small doses of from  $\frac{1}{6}$  to  $\frac{1}{2}$  a grain, continued for a long time and aided by cold lotions to the head, has rendered great service in such cases.

As an anti-syphilitic, M. Hauner employs the soluble mercury of Hahnemann with the greatest success, while every treatment, as with iodine, sarsaparilla, etc., has had absolutely no effect. In persisting in his plan of treatment for a sufficient length of time, he has secured the permanence of the cure.

25. *Belladonna*.—It always has shown its value in whooping-cough. Nevertheless the last epidemic appeared to be refractory under its use, which M. Hauner explains on the peculiarity of the epidemic, characterized by prolonged catarrhal prodromena, a short spasmodic stage, and a long continued terminal cough.

26. *Tartar Emetic*.—This salt in a single dose of from gr.  $\frac{1}{3}$  to gr. ij, according to the age, has often a wonderful effect in *pneumonia*, especially the catarrhal, in broncho-pneumonia, in croup, etc. In case of sanguine and robust infants, in marked inflammation, we must employ it after abstraction of blood, and without the latter, in case of feeble and scrofulous children; but diarrhœa and diseases of the digestive apparatus, contraindicate the use of the antimonial. Though its use is less admissible in pure *gastric affections*; an accumulation of mucosity in the stomach is one of the complications of catarrhal affections of the respiratory organs and in which it may be admissible.

In doses of from  $\frac{1}{30}$  to  $\frac{1}{6}$  of a grain, the tartar emetic increases the activity of the secretions and excretions of the skin, lungs, kidneys, intestines, and is indicated in a host of diseases, such as catarrhs, rheumatic, eruptive, and inflammatory fevers, active inflammations, especially of the respiratory apparatus, pulmonary and bronchial catarrhs, and blenorrhagias; affections of the liver and biliary ducts; acute rheumatism, erysipelas, etc.

27. *Cold Water*.—The limits of this article, notwithstanding the importance of the subject, will not permit us to give the details in relation to the use of the agent. M. Hauner refers constantly to articles on the subject previously published, and which we are not in possession of. We can only remark that he employs this agent according to the principles of hydrotherapy in many diseases, and with great success; such as typhoid affections, croup, the dermatoses, scrofulous affections, rickets, diseases of the nervous system, &c.

28. *Cold Baths; Injections*.—These are daily used in a great number of affections, the baths and injections being either simple, medicated, or nutritive; these latter being composed of froth and the yoke of eggs. In general the indications have nothing special which is not well known; but M. Hauner, employs these means much more frequently than most practitioners, and he extols them excessively.

We have already detailed what he has to say in relation to local blood-letting, (he never practices general blood-letting,) in another article.

M. Hauner says nothing of embrocations, sinapisms and blisters, as he rarely employs them.

Although the preceding article deals in many facts which are already measurably known, we have not hesitated to thus give it at some length. It is a summary of the habitual practice of one of our greatest German specialists, who from his position, at the head of a great infantile hospital, is well able to pronounce on the real value of medicines.—With this view we give the article entire.

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ART. II.—*Cholera transmitted from Man to the Fowl, by means of Choleraic Discharges, mixed with Food:* by DR. CHARCELLAY; being Experiments made at the Ambulance of St. Etienne, by MM. RESNONEAU and HOMO, Heads of the Clinic, and Students of l'Hôpital Général of Tours. Read before the *Société Médicale* of the Department of *Indre et Loire*. Translated from the *Gazette Hebdomadaire*, April, 1856: by M. MORTON DOWLER, M. D., New Orleans.

On the 23rd of August, 1854, the ambulance of the general Hospital of Tours, having become insufficient for the number of Cholera patients furnished by the city and by the hospital inmates, the city government, coöperating with the administrative commission of this establishment,

decided on the erection of a supplementary ambulance for the exclusive reception of patients from the city and suburbs. This addition to the establishment was immediately erected in the public school-house of St. Etienne, on Grammont street. In a little inner court were placed three pigeons, and three domestic fowls, one cock and two hens.

For the space of thirteen days, patients were received and treated at the ambulance of St. Etienne, without any of the fowls presenting the least symptom of disease, though there had been given them, at two different times, a paste of crumbs of bread mixed with the alvine dejections furnished by the cholera patients, or found in the intestines of dead subjects. It is true that these animals, and especially the pigeons, evinced a repugnance to this aliment. The cock and the two hens eat of it many times, and did not appear to suffer any inconvenience. The experiment appeared to promise no result, when on the 14th day, at midnight, one of the hens showed symptoms of illness. She seemed sad, depressed, caring little to seek her food, being indifferent to what was passing around her. Her gait was slow and tottering, her wings slightly drooping were no longer in contact with the body; her feathers, chiefly those of the back and neck, had changed from their inclined position, and stood erect, on the surface of the body. Toward seven o'clock in the evening the hen retired to her nest, where, at nine o'clock, she had neither mounted on her perch, nor lain down on the ground; but was standing up motionless, neither seeking to avoid or fly the hand that seized her.

Then were witnessed symptoms truly choleraic, which supervened a few minutes before death. Thus the hen, which was cold, was crouched down on her belly supporting her beak, and even her head, on the ground. She turned herself on her side, showing convulsive movements in her feet, thighs, and wings, fluttered and twisted herself, and rejected many times, by vomiting efforts, a gluey, viscous, whitish, and lightly frothy fluid. She had also numerous fluid, alvine dejections, of a yellowish white, and very foetid, she raised herself and was violently agitated on her feet, as if she had cramps. The heat of the body was notably diminished. The crest, from being of a lively red, and even of a deep violet, wrinkled, flaccid and falling, put on a bluish tint, more and more marked. The skin itself became cyanosed, and the feathers stood erect. At last the hen showed the final convulsions, and died, elongating and turning the neck. This little scene continued for two or three minutes.

*Autopsy*, made fifteen hours after death, Sept. 7, at 12 o'clock, at an extremely high temperature. The crest, cyanosed and pale, was of a more violaceous color than the eyelids and commissures of the beak. The skin



had retained the blueish tint that it had first assumed, and the flesh also presented this color, though less marked. The margins of the beak and all the buccal cavity were moistened with a stringy citron colored fluid. The epithelium of the point of the tongue was white, and remarkably indurated. The feathers around the anus, were soiled by the dried matter of the dejections—matter much resembling a deposit of plaster, lightly colored yellow. No spots or ecchymoses whatever were found on the body.

An incision made into the abdominal cavity, gave exit to a little albuminous, yellow fluid, of an offensive odor—of some consistence, and bedewing the greater part of the abdominal organs. The anterior face of the liver was covered with a thick coating of this fluid, lightly adhering to its tissue. As to the liver itself, the character of its color and structure seemed in no way modified. Nevertheless, it was friable, and little consistent. We found nothing which appeared abnormal in the spleen, the kidneys or the pancreas. In the oviduct there was a manifestly injected condition; but the cause of which was doubtless owing to the super-excitement of the organ at this epoch, which was with the animal that of regular daily laying eggs. The opening of the crop, the gizzard, and the *ventriculus succenturiatus*, offered nothing special. It was otherwise, however, with the small intestine, which, through the extent of about from 20 to 25 *centimètres*, (7 + to 8 + inches,) beginning at the gizzard, presented four large accchymosed spots, very distinct on the peritoneal, but much more so on the mucous surface, on which, however, we did not find the little sanguineous granulations, often observed in the intestines of gallinaceous animals, which died during the epezoötic of 1851. While the isolated follicles of Brunner were numerous enough affected to constitute an evident psorentery, some of the *plaques* of Peyer appearing lightly raised, without there being evidence sufficient to indicate a real morbid condition. The matter contained in the intestine, and the cæci were in every respect similar to those which had been expelled *per anum* during life. The heart and lungs, which were explored with care, did not present any ecchymosis or other morbid alteration; but the blood contained in the right ventricle was found in the form of black and resistant coagula, the left ventricle being empty. We did not inquire into the degree of adhesion of the blood with the internal coat of the veins; nor into the influence that the prolonged presence of the blood in these vessels might have had on the color of the membranes, composing the tissue of the venous parietes.

In the nervous system we saw nothing which appeared worthy of remark.

At very nearly the same period, that is to say, during the first days

of September, the other hen and the cock, as also two or three of the pigeons, manifested a severe thirst, showing at the same time diminished appetite. During the 8th, 9th, and 10th of the month, the cock had completely lost his voice, and made ineffectual efforts to crow.

The following is an extract from the daily notes made at first by M. Homo, before the occurrence of the grave premonitory symptoms of cholera, which forced him to abandon the ambulance of St. Etienne, and to abruptly break off a service which was supplied by M. Paumier, first substitute student, assisted by M. Carrignon.\*

*Monday, Sept. 4.*—The white hen and cock have refused to take the paste; whilst the black hen has eaten of it at once, and has rejected it immediately.

*Tuesday, Sept. 5.*—The black hen has taken of it three times, and then leaves it without returning to the plate. The cock has partaken of it freely, five or six times; the white hen refuses to eat of it.

*Wednesday, Sept. 6.*—The female nurse at noon perceived that the black hen was sick; though the woman did not mention it till six o'clock in the evening. This hen was then crouched on the straw, in the roost, where she was accustomed to retire in the night. She frequently opened her beak, and appeared to respire with great difficulty.

These different experiments, which were continued for three weeks, in August and September, were conducted with the greatest precaution; and ought to afford all possible guarantees as to authenticity. The hens did not go out of the yard, and they were fed in the presence of the nurses or students. The three pigeons experimented on, were retained in a cage; and it was so arranged that it was impossible for the other pigeons to have access to the choleraic paste.

All I have here detailed relates only to the *introduction of choleraic matter into digestive organs*. Another order of experiments projected by me towards the close of these, related to the subject of the *inoculation with choleraic fluid*; as dejections, blood, etc. But circumstances existed which prevented me from putting my design into execution. Thus, aside from the grand reasons before related—the engrossing duties—the fearful agitation of the masses during epidemic cholera, it was quite necessary that I should have an isolated location, at a certain distance from the city, in order to withdraw from the epidemic influence, the animals to be experimented upon. At these calamitous periods, difficulties such as these constitute obstacles truly insurmountable to the provincial

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\* In consequence of their courageous devotedness, these two students have experienced severe and repeated premonitory symptoms of the epidemic scourge. Some months later, M. Paumier was attacked with typhoid fever; as also were many persons whose service called them to take up an abode, more or less prolonged, amidst the choleric foyers.

practitioner, whose time is entirely employed in frequent visits to the hospital, or other public establishment, by private practice, or municipal service to cholera patients at their domiciles. Moreover, it became impossible to proceed with these experiments, as most happily our epidemic is at an end.

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ART. III.—*Albumen*: translated by B. DOWLER, M. D.; from the Jour. de Méd. de Bordeaux.

M. J. JEANNEL, professor of Mat. Med. in the Medical School of Bordeaux, who has written several articles reviewing the new work of M. Mailhe, pharmaceutist to the Emperor—( *Chimie appliquée à la physiologie et à la thérapeutique* ) quotes and adopts from this work the following conclusions concerning the behaviour of albumen in the animal economy :

1. Normal Albumen or the serum of the blood and the white of the egg, do not traverse the animal membranes, *being insoluble*.

2. This state of insolubility ought to implicate the organism similarly with other substances which resist the law of endosmotic action, as fibrin, casein, and cruror among animals ; starch and gluten in vegetables ; substances known to have a globular organization, being held in suspension in liquids which serve as their vehicles.

3. As with these globular bodies, so albumen ought, in order to interpenetrate the economy, to undergo such modifications as will render it soluble and fit for the process of assimilation.

Thus normal albumen being insoluble and not amenable to endosmosis, is, when modified by a ferment (*pepsin*) not only rendered soluble but traverses the membranes perfectly.

4. By following out these transformations, albumen will be found in the animal economy in three conditions, having very distinct characteristics—namely, normal albumen, modified or *caséiforme* albumen, and albumenose.

Thus, says the reviewer, has M. Mailhe, thrown light upon the curious parallelism which exists between the vital processes of the two kinds of aliments, the amylaceous and the albuminous. The pepsin acid is like the distaste of albumen. The consequences resulting from these facts are of great physiological and pathological value.

M. Mailhe arranges medicinal substances into two classes, namely, the "*fluidifiants*" and the "*coägulants*."



ART. IV.—*Divers Formulæ for the Employment of the Ammonia, and the Ammoniacal Salts:* translated from the French by M. MORTON DOWLER, M. D., New Orleans.

As the ammoniacal preparations are more and more commanding the attention of physicians, M. le Docteur Guépin of Nantes, communicates to his confrères the following series of formulæ, as being the fruit of a long experience in his practice. SOLUTION FOR COUNTERACTING DRUNKENNESS. A man is laying on the steps of your house, dead drunk; not being able either to speak or to respond to your signs. You have only to take a glass of water, and drop in it from 5 to 15 drops of liquid ammonia, and cause him to swallow this glass of water, and he will come to himself, arise, go away, and you are rid of the annoyance.

BLISTERING LIQUID.—R. *Ammonia*, part. j; *Olei*, part. ij; *M.* Take a piece of wadding of the size of the blister you wish to create; remove from one side the gummed portions, moisten freely with the above liquor the side from which the gum has been removed, and apply this vesicatory to the destined part, and in five minutes the effect will be produced.

EXCITANT FOMENTATIONS FOR THE EYES.—R. *Ammonia*, 3jss; *Alcoholis Camphorata*, 3ijss; *Ætheris Sulphurici*, 3jss. *M.* Let it be kept in a ground stoppered flask. If you unstop this flask and bring it near the eyes, there will be an immediate flow of tears, the agent producing an abundant secretion from the lachrymal glands.

FORMULA FOR SEDATIVE LIQUORS.—*Aque*, 3jv; *Ammonia*, 3ijss; *Alcoholis Camphorata*, 3j; *Sod. Chlor.*, 3jss; *M.* Compresses steeped in this liquid, have a happy effect in sprains, luxations, contusions, in erysipelas, in stings of bees and wasps. A woman was one day brought into the Hotel Dieu of Nantes, suffering from phlebitis, as the consequence of a leech bite on the ankle of the right leg, which was enormously distended with erysipelatous inflammation; and our *internes* regarded death as certain, but applied the above sedative lotion. In twelve hours the danger was over.

A VALUABLE SOLUTION IN ENGORGEMENTS OF THE WOMB.—*Aque*, 3jx; *Ammon. Hydrochlor.*, 3jss; *m. ft. Solutio.* Take night and morning a dessert spoonful in a glass of tilly water.

MODIFICATION OF THE ABOVE TO BE EMPLOYED IN SCROFULOUS CASES. *Aque*, 3jx; *Ammon. Hydrochlor.*, 3jss; *Potassii Iodid.*, 3ijss; *m. ft. mist.* To be taken in the same manner.

THE SAME PREPARATION COMBINED WITH DEPURATIVE SYRUPS.—R. *Syrup. Sarza Compos.*, 3xv; *Iod. Potas.*, gr. xjv; *Ammon. Hydrochlor.*, gr. xv. *m. ft. mist.* Take a tablespoonful night and morning in some warm drink.

The hydrochlorate of ammonia is very valuable in engorgements of the breasts, used both internally and externally; internally, under the form above indicated; and externally, to be sprinkled *very lightly* over emollient cataplasms.

OINTMENTS.—The following is one of the best resolutes that can be employed in serofulous engorgements:—*R. Arungia*, ʒj; *Ammon. Hydrochlor.*, ʒj; *Plumbi Iodidi.*, gr. xv. *m. ft. ungt.* Or thus:—*R. Arungia*, ʒj; *Ammon. Hydrochlor.* ʒj; *Camphoræ*, gr. xv. *m. ft. ungt.*

The above we have often used in the form of frictions to the vertebral column; sometimes in rickets; sometimes after the application camphor when the vertebræ are affected, and we would produce a resolute and irritant action; sometimes in affections of the spinal marrow. The following is an eligible formula when we would obtain a strong rubefacient action: *R. Arungia*, ʒj; *Ammon. Hydrochlor.*, ʒjss.; *Camphoræ*, gr. xv; *m. ft. ungt.*

ANTI-RHEUMATISMAL OINTMENT.—*R. Auxungia*, ʒj; *Ammon. Carbonatis*, ʒss.—ʒjss.; *Calomel*, ʒj; *Ext. Opii*, gr. xlv; *Ext. Hyoscyami*, ʒjss.; *m. ft. ungt.* Frictions made with the above on the joints affected succeed well when they are prolonged, in cases of peasants, sailors, and laboring men, and it has well succeeded with the higher class.

In syphilitic diseases, and the disorders which succeed them, the ammoniacal salts, and especially the hydrochlorate, may, with advantage take the place of the iodide of potassium, and we may, moreover always administer the two latter in combination. The following formulæ are applicable to these diseases, and to other cutaneous affections. *R. Aquæ*. oʒ; *Sublim. Corrosiv.*, gr. xij; *Am. Hydrochlor.*, ʒjss; *Potas. Iodid*, ʒiij. *m. ft. mist.* This solution has often rendered important services in various syphilitic affections in syphilitic iritis, and in syphilitic periostitis.

*Anti-Syphilitic baths.* *R. Sublimat. Corrosiv.*, ʒijss; *Am. Hydrochlor*; ʒijss; *M. To be used for an ordinary bath, sufficient to immerse the body,* *Anti-Psoriæ baths.* *To be made of from ʒijss. to ʒiij, of the hydrochlorate, in the ordinary quantity of water.*

*Anti-Syphilitic Ointment.* *R. Calomelan.* ʒj; *Am. Hydrochlor.*, ʒj; *Arungia*, ʒj; *m.*

As a sudorific, I prefer the acetate of ammonia to any of the other ammoniacal salts.

But we close here. The examples which we have presented, will suffice to show the extent of therapeutic power which the salts possess. Our formulæ are in reality but a summary of a chapter that we might write on this important subject, and we here conclude by remarking:—That the ammoniacal salts are exceedingly active resolute stimulants,

to which we do not resort to in vain. They are attended with the immense advantage, that in introducing them into the system, we are not introducing any substance foreign to constituent principles of the organism; and these salts, moreover, are readily expelled by the bowels, the kidneys, and skin.

Some of these formulæ have been long used in the *Hôtel Dieu* of Nantes, and we would especially signalize, as having rendered great service, those which we have recommended in engorgements of the womb.—*Journal de Médecine et de Chirurgie*.

ART. V.—*On the Preservation of Animal Matter by the Earthy Chlorides*; by M. BARBET, Professor at the School of Medicine. Translated from the *Journal de Médecine de Bordeaux*: by M. MORTON DOWLER, M. D., New Orleans.

THE preservation of animal matter has always occupied the attention of chemists and physicians; and all know how fruitless hitherto have been the results. The most ancient of the means employed, that of salting, proves nevertheless, that we may give some degree of permanence to animal matter. The inevitable hardening produced by the prolonged use of marine salt, is an objection which necessarily limits the employment of this agent to the preservation of flesh designed for aliment.—This agent is not adapted for long preservation, the anatomical specimens thus treated being soon found to be deteriorated.

Various substances, as the *sulphate of soda*, the *acetate of alumina*, the *chloride of zinc*, have furnished very different results. The first has not produced the desired result; the second, in the hands of M. Gannal, has produced results which though reported as satisfactory, his experience has not accorded with the observations of others; and moreover, the high price of the material was an obstacle to its general use. The *chloride of zinc* has better stood the test. This salt, owing to its deliquescence penetrates the tissues, fixes the soluble organic parts by combining with them in the form of insoluble products, and thus superinducing in the animal matter, a stability which appears to preserve it for a long time from decomposition. The limits of this preservation have not yet been assigned, the method not having yet had sufficiently the sanction of time; but all concur in the fact that the period of time is very long. We have very often put this agent to the test in this behalf, and always had reason to felicitate ourselves on the result.



A more recent method, which comes to us recommended by numerous experiments, and which is remarkable for the important objects and results it has furnished, is the method of M. Lapeyrouse. The name which he gives his method—a name which sufficiently designates his object and pretensions—is the *Mineralization of Animal Matter*. His method has been the subject of a patent taken in the name of the General Maritime Society; but all of the merit reverts to M. Lapeyrouse, the discoverer of the method. It consists in the employment of *chlorides* of the metallic earths, such as the chloride of aluminum, which, like the chloride of zinc, are deliquescent, and furnish analagous results. Experiments made in the presence of a Commission of the Council of Hygiene of the Gironde, no longer leaves the least doubt on the realization of the greater part of the result announced by M. Lapeyrouse. The immersion of fresh organic matters in a solution of the chlorides, kept up for from 20 to 30 hours, and aided by a temperature of from 30° to 35° was sufficient, according to the discoverer, to so modify the animal matter, and to communicate to it the property of stability, that it could be preserved without limit.

The experiments made before the commission were practised on the body of a horse, five or six days dead.

A quantity of the soft parts were cut into small particles by a hashing machine, and the minced flesh was deposited in the saline solution.—The odor disappeared immediately, and the matter put on a grayish white appearance, without any sensible contraction.

The skin of the horse was also immersed in the same kind of solution without any previous preparation. The fresh skin of a sheep; an entire quarter of a horse, on which longitudinal incisions had been made, in order to facilitate the penetration of the saline liquor; some calves brains entire, and invested in their membranes. Some bullock's blood, mixed with the solution, combined with it immediately. An abundant precipitate formed of fibrin and albumen rendered insoluble, produced in the mixture, after the necessary repose, two distinct coats, from the uppermost of which all the aqueous fluid was excluded. The lower coat which was grumous, was placed on a filtering surface, in order to deprive it of its excess of humidity. This was solidified blood.

All these materials thus treated were well washed, in order to remove the excess of preservative material, and thenceforward they acquired the property of permanence, for an unlimited time. In such case they can be submitted to desiccation in the open air, or they may, indeed, be retained in their humid state; and in either case the preservation is altogether satisfactory.

After exposure for forty days in the air, in a variable temperature

favorable to cadaveric putrefaction, the muscular parts of the quarter of the horse were in no way altered. They had no unsound odor, and presented, under the knife, all the appearance of the most perfect preservation.

The brains of the calves, kept in fresh water, had not undergone any alteration, their appearance, consistence, and odor all showed them to be similar to fresh brains. \*

The skins had preserved their flexibility. The hair adhered to the skin as firmly as at first. Nothing showed the least decomposition. M. Lapeyrouse even asserts that the leather thus furnished is superior to that which is furnished by the raw hide.

The solidified blood and the hashed flesh were desiccated in the air, and furnished a dry and imputrescible product, and which, nevertheless, has not lost the property of acting as a very fertilizing manure, when disseminated to the soil, decomposing slowly after the manner of horn.

The solution of the earthy chlorides possess, as may be seen, the most precious properties which may be turned to vast account in anatomical preparations. Without entering here into consideration of the process of M. Lapeyrouse, in its relation to industrial interests, which we believe is destined to an eminent future, we believe that he has rendered a great service to the cause of science. Anatomical preparations, which it is so important to study in their fresh state, can be preserved for more than a sufficient time from all putridity, from which such alarming results so often occur to those who long devote themselves to dissections. Dead bodies injected with this liquor, are, in fact, in such a state of stability, that they may be dissected for a very long time without the least trace of alteration being perceivable.

The art of embalming will also find a convenient and inexpensive means of arriving at its end. This saline liquor readily yields an easy manipulation, and may be injected without any inconvenience to the operator.

We believe that in case of cadaveric injections, the injection syringe the force of which is sometimes difficult to graduate, might be dispensed with, and in its place there might be placed a reservoir about ten feet above the cadaver, and a long tube be adapted, the flexible extremity of which might terminate in an injection canula. The pressure of the liquid column would be sufficient to push the fluid into the most minute ramifications of the vessels, and produce an injection as satisfactory as could be done with the best force-pump.

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\* At the Universal Exhibition, brains prepared according to the process of Lapeyrouse were preserved during the whole Exhibition, with the single precaution of changing the water every eight hours.

The chloride liquid of M. Lapeyrouse, ought henceforth to be found in all anatomical amphitheatres; where it will secure the double advantage of rendering study more easy, and will, above all, secure to these places, ordinarily so insalubrious, all the conditions demanded by a prudent and rational hygiene. Might we not hope that it may prove highly useful in surgery, as a disinfectant, in case of gangrene, sphacelus, or hospital mortification? This we cannot prejudge. We shall probably attempt something in the premises:

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ART. VI.—*The Sulpho-Cyanuret of Potassium, a constant and normal Constituent of the Saliva. Académie des Sciences. Sitting of March 16th, 1856. Translated from l'Union Médicale: by M. MORTON DOWLER, M. D., New Orleans.*

M. J. CLOQUET presented in the name of M. Longet a memoir which is an extract from a more extended work entitled "*Researches, Experimental and Critical, on the various Digestive Fluids of the Animal Economy*," a work of which it is proposed to submit the principal facts to the Academy, before publications in the second volume of his "*Treatise on Physiology*."

The new memoir of M. Longet, of which I am about to make known the conclusions, said M. Cloquet, and which is at one and the same time of the greatest interest, both in its relation to chemistry and physiology, bears the following title:—"The Sulpho-Cyanuret of Potassium, considered as one of the normal and constant constituents of the Saliva."

The following are the conclusions with which M. Longet closes this memoir:—

1. The sulpho-cyanuret of potassium which, according to the generally received opinion, does not normally exist in human saliva, but makes its appearance in it only under certain fortuitious circumstances—its appearance being even considered as allied to a pathological condition—should on the contrary be considered as one of the normal and constant constituents of the fluid.

2. It is met with, not only in the mixed, or buccal saliva, but also in the parotidian, submaxillary, and sublingual.

3. Its presence is in some sort characteristic of the salivary secretion; for the sweat, the urine, the tears, the cerebro-spinal fluid, the serum of the blood, the serosity of blisters, have never yielded to me any trace of



the sulpho-cyanuret; and I may say the same of the pancreatic juice, taken from the sheep and bullock.

4. This salt exists in the saliva in variable proportions, always very minute; the variableness depending on neither age, sex, regimen, nor particular condition of the nervous system; *but only on the degree of concentration of the salivary fluid.*

5. In a too great fluidity of the saliva, resulting from a very abundant secretion, the sulpho-cyanuret may become inappreciable to re-agents; but in such case it is only necessary to concentrate the saliva, by a slow evaporation, in order to *constantly* obtain the characteristic reaction, resulting from the presence of this agent; as I have observed in pyrosis and mercurial salivation.

6. Neither the normal nor morbid condition of the teeth have any influence on the presence or abundance of this product; but on the other hand, it is found in persons absolutely edentate.

7. Neither does the presence of the sulpho-cyanuret, as has been asserted, result from a spontaneous alteration of the saliva.

8. In order to *isolate* it, as I have done, we should take by preference the saliva after fasting.

9. Of all the per-salts of iron, the perchloride is the best re-agent in detecting the sulpho-cyanuret in the saliva, giving this liquid when *sufficiently concentrated*, the fine red color of the blood.

10. No other substance, organic or inorganic, contained in the saliva, gives with the perchloride of iron the same reaction as the sulpho-cyanuret; and the coloring aforesaid has been erroneously attributed to the presence of alkaline acetates in the salivary fluid.

ART. VII.—*Blood considered as an Aliment, and as a Remedy.*  
Translated from the *Revue Thérapeutique*: by M. MORTON  
DOWLER, M. D., New Orleans.

THE inhabitants of the Arctic Regions, says M. Rimaud, drink the blood of the sea-calf and the reindeer. Such nutriment enables them to support the rigor of their climate. For some years past, I have in my practice had recourse to the employment of this agent; and the advantages which I have derived from it induces me to recommend it. The admirable influence which nutritive substances taken alive into the stomach, exercise on the animal economy, cannot be denied. In proof, the author recalls the happy effects of the mother's milk, edible snails eaten alive in cases of diseases of the chest, oysters eaten

from the shell, raw meat hashed, in cases of lientery of children; and then he shows that blood, more than any other aliment, contains the materials of nutrition, and may for a long time serve to support life. The blood then, still living, is at once a substance extremely restorative and easy of digestion.

The diseases in which M. Rimaud advises the use of blood, are those which are characterised by a profound debility, (anæmia? *Tr.*) certain gastralgias, diabetes, certain forms of chlorosis, etc. The following is the manner, according to the author, that blood ought to be administered. It ought to be taken fasting or a good while after meals. Begin with a small quantity, not to exceed one-fourth of a glass, which may be increased at length to half a glass. If possible, the patient ought to resort to the slaughter-house, and drink the blood as it issues from the vein, before the formation of the coagulum. Calf's blood is preferable to any other, from its being less heavy and less substantial than the blood of the adult animal, and from the fact that the calf is slain at an age in which disease is not so often existent. It is not always easy to overcome the repugnance of patients; but after the first efforts, the patient becomes habituated to this liquid. Moreover, it is without disagreeable taste, and the patient has the sensation as though he were drinking warm milk. It merely leaves an alkaline after-taste that is easily banished by putting a piece of sugar in the mouth, after having taken it. Warm blood is easily digested. The author concludes, that in place of wasting the blood at the slaughter-houses, it might be rendered useful as an aliment for the people, at least in time of famine.—*Gaz. Méd. de Lyon.*

*Note by the Translator.*—There is a plausibility about the remedy of M. Rimaud, which challenges a thorough trial of its effects in a considerable class of diseases. Without referring, however, to the Law of the Pentateuch, by which the remedy would be at once considered as “inhibited and out of warrant,” we leave it to the church to decide the question as to whether, under the New Dispensation, it is, or is not, literally unlawful—whether it be an indispensable obligation on the Gentiles, as an offset to the immunity granted to the uncircumcision, that “they abstain from things strangled and from BLOOD.”—(Acts xv, 20, 29.) “As touching the Gentiles which believe, we have written and concluded, that they observe no such thing, save only, that they keep themselves, &c., and from BLOOD, and from things strangled, &c.” (Acts xxi, 25.) As to the dose, though the patient in putting the cup to his lips might not, like Chourineur in “The Mysteries of Paris,” absolutely “see red,” yet it may be well imagined that “*il n'est pas toujours facile de vaincre la répugnance des malades.*” The remedy is well worthy of trial.

ART. VIII.—*Viperine Inoculation not a Preventive of Yellow Fever*: translated from *Gaz. Heb. de Méd., &c.*, for April, 1856: by M. MORTON DOWLER, M. D.

THE government Brig *Méléagre*, lately arrived at Brest, after a long station in the waters of the Antilles, and the Gulf of Mexico. Its chief surgeon, M. Berg, has, in a report bearing date March 31st, 1856, set forth the observations made by him during the sojourn. This document contains a positive appreciation of the results furnished by the inoculation practised by Dr. Humboldt, in yellow fever. The account completes the intelligence hitherto put forth in this Journal, and it ought naturally to find a place in our columns.

M. Berg arrived in the capital of Cuba, six months after the departure of the French Commission sent by the government of Martinico, and of which we have already made known the report. The first care of the chief surgeon of the *Méléagre*, was to endeavor to determine whether or not the persons inoculated had afterwards contracted the yellow fever.

We will permit him to speak for himself:

“For this purpose I visited all the leading Hospitals, civil and military, of Havana. I learned that on the Spanish frigate *Cortes*, ninety persons who had been inoculated, had died of the yellow fever.

“At the Military Hospital two hundred men at least had sunk under the disease, in spite of the employment of the virus.

“At the Hospital of Dr. Belot, I myself found fifteen cases of the disease in persons who had previously undergone the inoculation.

“The process had undergone judgment at the time of my departure, and touching the primary effect of the inoculation, it was admitted after numerous experiments, that the putrid matter of the sheep's liver, unmodified by the presence of the virus of the serpent, gave rise to the same symptoms as those which followed the inoculation with the liquid prepared by the discoverer.”

We have already, in the New Orleans Med. & Surg. Journal, alluded to the filthy imposition of the *soi-disant* nephew of the Baron Von Humboldt. The encouragement and patronage he has received, in various quarters, even at the hands of the profession, reflect but little credit on all concerned.



ART. IX.—*Therapeutic application of Pepsin*: translated from the Journal de Méd. de Bordeaux, March, 1856: by M. MORTON DOWLER, M. D.

THE Memoir of M. Corvisart on the therapeutic application of pepsin, (*Bul. de Thérap.*, t. xlvii., p. 320,) presents some experimental researches on this agent. M. Barthez has verified the happy effects of this remarkable substance, in numerous cases of diarrhœa, from habitual indigestion in young children, and M. Rilliet has reported a case of lieutery, in which diarrhœa has yielded rapidly under the use of pepsin. M. Debout confirms these results by the favorable effects which has been seen under the use of this agent in three obstinate and serious cases of diarrhœa in children at the breast.

We may readily conceive that the ferment under the influence of which the albuminoids (*fibrin, albumen, and casein*,) are dissolved in the stomach, ought to favor the digestion of these materials, and that indigestion may depend on the deficient secretion of this essential element, the gastric juice.

Pepsin is given in doses of five centigrammes, ( $\frac{3}{4}$  gr.) at the beginning of each meal, and according to the observers before cited, it immediately determines a marked improvement in the digestive process, and the stools which before abounded in indigestive matter, take on the character of normal fecal discharges. (*Bul. de Thérap.*, 15 December, 1855, p. 515.)

ART. X.—*Leucothemia*: by Dr. F. DE PURY, of Neuchatel. Reported by Dr. STROKE. Translated from *l'Union Médicale* of April 17th, 1856; by M. MORTON DOWLER, M. D., New Orleans.

THE following case of Leucothemia was observed in 1854, in the Clinique of Heidelberg.

A day-laborer, *æt.* 24, in his youth affected with scrofula of the cervical glands, abdominal inflammation at 19 years of age. From this date his strength has never completely returned, and the abdomen is tumefied, notwithstanding which, the patient has continued to labor. It was not till five years afterwards that he entered the hospital, on the 5th of March, in the following condition:—general pallor; skin of a dirty yellow; abdominal effusion in the left side; a considerable tumor extending from the nipple to within three fingers' breadth of the left in-

guinal canal, and within four fingers' breadth of the umbilicus. This tumor was evidently the spleen; there were probably tubercles in the upper points of the lungs; pleuretic effusion in the right side augmenting the size of the same; considerable feebleness; no fever; nothing special in the urine. *The patient says that he has never had intermittent fever.* For the space of three months there was no remarkable change in the condition of the patient. Towards the close of this period, however, an improvement in his case induced the patient to quit the hospital, to which, four days afterwards he was re-admitted, in a deplorable state; anasarca and ascitis augmented, with dyspnoea, and he died two days afterwards, with symptoms of pulmonary oedema.

Amongst the morbid manifestations which were existent at the autopsy, we shall only recount those of the spleen, which was considerably augmented in volume, and quite consistent. In its internal structure there were found lardaceous concretions, of a yellowish white, of different sizes, and exactly defined by the circumambient tissue. Under the microscope they were found to be composed of shriveled cells, of nuclei and of corpuscles, analogous to the tuberculous mass. There was further discerned a remarkable pigmentation especially observable on the margins, and in the tract of the vessels. In this pigment were observed special corpuscles, almost crystalline, of the size of  $\frac{1}{800}$  of a millimetre, unchangeable in nitric and sulphuric acids, and very little changed by caustic potash. Never before, so far as is known, was anything similar discovered in the spleen. The remainder of the hypertrophied tissue had the normal structure.

To sum up the case, the patient had from the beginning been affected with tuberculization of the cervical and bronchial glands. Later in the case there supervened manifestations of serous inflammatory action, as shown by old adhesions in the pleura, pericardium, and peritonæum. It cannot be positively determined at what period the disease of the spleen began to exist, but it was probably almost five years previously. The yellowish masses met with in the spleen have not been hitherto noticed in any case of leucothemia; though in other respects the tissue of this organ was found to be in the condition which is observable in this disease. Toward the termination of the case, fresh serous and fibrinous exudations made their appearance in the pectoral and abdominal cavities. Lastly, an acute milliary tuberculization, especially in the abdominal cavity, closed the scene.

M. de Pury, who had previously assisted M. Moleschott in establishing his method of determining the relation of the white to the red globules, has submitted the blood of this patient to different examinations. This method gives only the proportion of the white to the red

globules, and not the absolute number of the white globules. The figures we have given indicate the average resulting at the examination at each period, there being seven distinct visual fields explored at each time, these latter being necessary by reason of the fact that the white globules are very unequally distributed, some of the fields not exhibiting a solitary one, whilst in others they are numerously found. The following are results of explorations in twenty-eight different fields, which contained in all, white and red, from ten to twelve thousand globules. The blood examined was always taken from the end of the little finger, four hours after breakfast, and spread in a saturated solution of the sulphate of soda.

March 10th, five days after admission into the hospital, there was 1 white globule to 7 red—142.8 to 1000.

April 1st, 1 white to 12 red—83.3 to 1000.

April 28th, 1 white to 21 red—45.7 to 1000.

May 24th, 1 white to 19 red—52.6 to 1000.

In order to determine if the blood of the different veins would present different proportions, the blood of the splenic, portal, and jugular veins was collected five hours after death. Unfortunately the blood of the portal vein was not examined. There were some soft, semi-fluid, grayish coagula, which presented little else than colorless globules.

In the splenic vein, there was 1 white to 19 colored—52.6 to 1000. In the jugular vein, 1 to 40—25 to 1000.

These results, therefore, confirm those obtained by Funke, Kölliker, Moleschott, Vicordt and Welker, who have in like manner found the blood of the splenic vein more rich in white globules, than the other veins.

Admitting as the normal proportion, the figure given by Moleschott, and confirmed by Welker, that is, 1 white to 357 colored—2.8 to 1000, we see that, in this case, the proportion was largely augmented.

Leucothemia is always accompanied by an enlargement of the spleen, but it is not yet determined whether this lesion is a cause of the increase of the white globules, or if both depend on a common cause. The author has analyzed the blood in intermittent fever, accompanied with splenic tumefaction, fourteen patients having been examined, (eight tertians and six quotidians.) Three of them were examined a second time, and three more at various times. The blood was, in all the cases, taken in the apyrexia, and four hours after breakfast. The following were the results obtained :



## RECENT CASES.

I.—1	white globule to	462 red,	-	-	-	tertian fever.
II.—1	" "	454 "	-	-	-	<i>id.</i>
III.—1	" "	414 "	-	-	-	<i>id.</i>
IV.—1	" "	590 "	-	-	-	<i>id.</i>
V.—1	" "	402 "	-	-	-	<i>id.</i>
VI.—1	" "	443 "	-	-	-	<i>id.</i>
VII.—1	" "	542 "	-	-	-	<i>id.</i>
VIII.—1	" "	404 "	-	-	-	quotidian fever.

The mean result is 1 white to 463 red—2.1 to 1000.

## RELAPSED CASES.

IX.—1	white globule to	412 red,	-	-	-	tertian fever.
X.—1	" "	535 "	-	-	-	quotidian fever.
XI.—1	" "	406 "	-	-	-	<i>id.</i>
XII.—1	" "	529 "	-	-	-	<i>id.</i>
XIII.—1	" "	486 "	-	-	-	<i>id.</i>
XIV.—1	" "	510 "	-	-	-	<i>id.</i>

The mean result being 1 white to 479 red—2.0 to 1000.

As according to M. Piorry, there is always swelling of the spleen during the accession of fever, five of the patients were examined during the sweating stage:

IV.—1	colorless globule to	464 red	-	-	-	tertian fever.
VII.—1	" "	462 "	-	-	-	<i>id.</i>
XII.—1	" "	686 "	-	-	-	quotidian fever.
XIII.—1	" "	467 "	-	-	-	<i>id.</i>
XIV.—1	" "	657 "	-	-	-	<i>id.</i>

The mean result being one white to 547 red—1.8 to 1000.

In fine, the blood was examined in three of the relapsed cases, after by means of the sulphate of quinine, the fever had been banished for eight days, the spleen being at the same time tumefied:

XII.—1	white globule to	329 red,	-	-	-	quotidian fever.
XIV(?) 1	" "	397 "	-	-	-	<i>id.</i>
XV(?) 1	" "	326 "	-	-	-	<i>id.</i>

The mean result being one white to 350 red—28 to 1,000.

The results of these observations go to show, that in intermittent fever, the proportion of the white to the red globules does not sensibly differ from that of the normal condition; that during the paroxysm there is even a diminution of the white globules, and that finally, after the

cure, the spleen being at the same time more tumefied, the normal proportion re-appears.

We may draw the following conclusion from these observations:— That every swelling of the spleen does not strongly modify the relation of the white to the red globules. The experiments undertaken by M. Moleschott, have already given analogous results. Perhaps these may be but a certain given species of tumefaction of the spleen capable of bringing about the disproportion. There remains, however, the remarkable fact of the excess in the number of white globules in the splenic vein, relatively to that of the jugular.

M. Pury has, moreover, examined the blood of patients in some other diseases, with the following results :

1. A young chlorotic girl; 1 white to 350 red globules—1.8 to 1000.
2. A syphilitic woman, treated by diet ; at the beginning, 1 white to 376 red globules—2.7 to 1000 ; at the end, 1 to 301—3.3 to 1000.
3. Icterus, 1 to 252—4.1 to 1000. Many days later, 1 to 246.
4. Typhus, eight days after the invasion, 1 to 323—3 to 1000; fifteen days later, 1 to 571—1.7 to 1000; four days later, 1 to 602—1.6 to 1000.

The patient took for diet, first week, vegetable soup twice daily; in the third week, milk diet and broth; at the end of the third, an abundant and reparative diet.

MM. Donders and Moleschott proved in 1847, that the white globules are augmented after eating. M. De Pury has confirmed on his own person this result, and has seen the augmentation in question, and has observed that the white globules begin to very gradually to diminish in about an hour after.

Four hours after breakfast,	1	white	to	463	red,	.....	2.1	to	1000.
Thirty minutes after dinner,	1	"		363	"	.....	2.7	"	
One hour	"	1	"	391	"	.....	3.4	"	
Two hours	"	1	"	301	"	.....	3.2	"	
Three "	"	1	"	439	"	.....	2.2	"	

The preceding experiments are of the greatest importance, and though they do not trench on the question involved in the *nature* of *leucothemia*, they furnish, nevertheless, most precious materials, the discussion of which has been opened in the Medical Society of the hospitals of Paris.

From the same source, we have the following case of *leucothemia*, observed by Professor Heschl, of Cracow: A day laborer *at.* 68 was received in January, 1855, into the clinic of Professor Hauser, at Ollmütz. He could recall no previous disease; nevertheless, for the last two years he had continued to lose flesh, and to experience derange-

ments in the sensorial functions, such as myopia, sparks before his eyes, roaring in his ears, and dulness of hearing, which existed to a considerable degree on his entering the hospital. In the month of August, 1854, he received a violent contusion on the lower and outer portion of the left leg, and there thence resulted a tumor, which opened on the seventh week. Soon after the opening of this tumor, there appeared excrescences of a bad character, and the injured glands became gradually engorged. At the period of observation, the patient emaciated, cachectic, and in a habitual somnolent state, with rare exceptions; some times delirious; slight sensibility in the region of the liver and cæcum; but little fever; skin moist. The vegetating tumor on the left leg attained the size of a child's head, and contained some sequestra of bone.

The patient died in three weeks after. *Autopsy.* Lungs tuberculous at their summits, the inferior right lobe a little œdematous numerous points of gray-red hepatization, others with purulent infiltration in the way to the formation of abscesses, and about the size of peas. There was hyperæmia without hypertrophy of the liver. *The spleen displayed its normal volume:* the organ soft, and its capsule folded, the soft substance being of a reddish brown, without any apparent anomaly, and without foreign elements observable under the microscope. Nothing special in the alimentary canal or kidneys. In the cavities of the heart, in the pulmonary artery, in the aorta, the large veins, the trunk and ramifications of the vena porta, there was a liquid, deep dirty red blood, some small fibrinous, red coagula, and a great quantity of grayish yellow pitchy masses resembling thick pus. Under the microscope they showed themselves to be composed of slender filaments of fibrine, and constituted exclusively of white globules. The blood in which they were bathed as well as that which was drawn from several small veins, contained besides microscopic coagula, so great a quantity of white globules that they might be estimated as constituting at least one-third of the globules seen. They were a little swelled, provided with one nucleus, or several nuclei, and resembled altogether pus corpuscles swelled with water.

One-fifth part of the mesenteric glands were a little tumefied as also inguinal glands of both sides.

The tumor on the leg was a medullary cancer, fixed on the fibula which was destroyed in all its tract in the tumor.

The author regards this as an example of intense leucothemia, especially remarkable from the small degree of alteration in the lymphatic glands, and from the integrity of the spleen. If we take literally the name of this disease, this diagnosis could not be more exact, that is, a considerable augmentation of the white globules of the blood. But



does this lesion always correspond to the same disease? Are the white globules always of the same nature, and especially, have they always the same import? In other words, does there exist a *special malady* characterized by a superabundance of these globules, which itself is the consequence of a special alteration of any other organ, as most probably the spleen or liver? This is a question that I shall not examine here though I incline to an affirmative conclusion. The comparison with albuminuria, made by M. Barth, appears to me to possess every accuracy. We find albumen in urine in a great number of affections, though the true morbus Brightii constitutes a special affection, having the symptoms, progress and cadaveric lesions, peculiar to itself; a fact which no person at the present time will attempt to deny; though the name, albuminuria, be essentially bad. The same may perhaps be said of leucothemia. The increase of the white globules, may result from various causes, and be but an accessary phenomenon, as is albumen in the urine in heart disease, for example: at other time highly significant as in disease of the kidney. We must bear in mind that in France we know but very little of this disease, and that in order to appreciate it, we require greatly extended researches. It is in this view that memoir of M. De Pury appeared extremely available; for it proves clearly that every hypertrophy of the spleen does not give rise to leucothemia, and it has pointed out special alterations in this organ, in the cases he has examined.

The case of Professor Heschel appears to me but little conclusive. It is a little abridged, and lacks some details which are important to be known. Are the white globules, which were so numerous, the same as those seen in the cases of M. Virchow and others? Are these not, indeed, pus globules, with which the author himself more than once compares them? Might there not have been chronic pyæmia, having its starting point in the cancerous affection of the leg? The symptoms observed during life, and the cadaveric lesions speak more for this affection than for leucothemia, properly so called. The patient was at times in a somnolent and deteriorated state, and had neither œdema, hæmorrhage, nor diarrhœa. In the *autopsy* the right lung presented hepatized spots of gray-red, purulent infiltrations, and the beginning of the formation of an abscess as large as a pea.

This case cannot, then, be invoked to prove that true leucothemia can exist without lesion of the spleen, and perhaps the liver; especially in the presence of the results obtained by MM. Moleschott, De Pury, and others, who in these cases have always found the blood in the splenic vein to contain a much greater amount of white globules, than other veins. We might here even invoke splenic disease; for it appears

that the splenic capsule was plicated, and there might have existed anteriorly, a tumefaction subsequently dissipated.

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ART. XI.—*Perforation of the Appendix Vermiformis.*

IN the Transactions of the College of Physicians of Philadelphia (March 1856,) Dr. Gobrecht relates the following case observed by himself:—

The patient, aged 21, a carpenter engaged in making and setting heavy joist, was muscular, of average height, and had been apparently in good health. He was not originally under my own care, but according to the statement made when I took charge of the case, at 11 o'clock on the night of Sunday, February 10th, the first symptoms occurred at about 5, A. M., on the previous Thursday, consisting of abdominal pain, but no purgation, for which some "cholera medicine" was taken, but without relief, vomiting supervening at about 11 o'clock. During the day, and on Friday, the symptoms increased in severity, and on Saturday and on Sunday cups and poultices were applied to the abdomen, and internal remedies were employed, which, however, failed of their purpose; the pain continuing until Sunday noon, when it ceased suddenly and entirely, but the vomiting was unabated. For the first time since the attack the bowels were moved that evening by a clyster, but the passage, which was copious, had no fetid odor.

At the time when I first saw him, there was no abdominal tenderness, the belly being soft without tympanites, and the patient lying at length in the bed. Voice was good, respiration natural, pulse frequent, cool skin, moist clean tongue; but there was great general exhaustion and constant rejection from the stomach of a dark liquid like black vomit. I supposed from the detailed symptoms: 1. That he might have had enteritis resulting in gangrene. 2. Or internal strangulated hernia terminating in gangrene. 3. Or that he might have had peritonitis.

His obstinate vomiting and complete exhaustion were, however, the only symptoms to combat; accordingly the patient was placed on liq. calcis f3ss. every half hour; broken ice to be held in the mouth *ad libitum*, and counter-irritation over the epigastrium was made by repeated application of mustard cataplasms.

Milk punch and essence of beef were given freely, and flying mustard plasters were placed on the body and extremities.

The vomiting was thus checked, but not stopped; and the patient rallied. On Monday morning he was somewhat better, pulse a little stronger, voice good, mind perfectly clear; vomiting not so great; had rested a little during the night. Placed him on quiniæ sulph. gr. ij every second hour; and morph. sulph. gr.  $\frac{1}{8}$  every 6 hours. Continued the stimulation and nourishment.

During the after part of the day, however, the favorable symptoms declined, the vomiting continued and the mind wandered a little, but the patient would not admit that he was more unwell.

On Tuesday morning I found that his physical powers had been slowly failing since the previous evening, and when left perfectly quiet there was some disturbance of intellection, but he returned intelligible answers when addressed. It was evident that death would occur before many hours had elapsed, though not immediately, and being of perfectly clear mind it was thought best to apprise him of his actual condition, which was done in the gentlest manner possible. It was found that he had no apprehension of his extreme danger, and his life seemed to have been prolonged by the hope of recovery, for when informed of his real situation he asked anxiously, "Can you not *try* to do more?" then turned on his side, became restless, and had himself propped up in the bed; his mind wandered, breathing was labored, vision became indistinct; he was insensible to those around, and died at 10½ o'clock, within a half hour after being informed of his hopeless condition.

On examination 24 hours after death, cadaveric rigidity being complete, extensive peritonitis was discovered. The great omentum was thickened, vascular, and bound firmly to the right iliac region. All the coils of the small intestine adhered. The cul-de-sac between the bladder and rectum, by the agglutination of the sigmoid flexure, small intestine and upper fundus of the bladder, was completely shut off from the general peritoneal cavity, thus forming an abscess lined by very thick false membrane, containing more than a teacupful of purulent fluid. Several small circumscribed collections of purulent fluid formed in a similar manner were found in the vicinity of the ascending colon, which was drawn down and attached to the cæcum and appendix vermiformis so firmly that some force was required to separate them.

The removal of the colon revealed the appendix, which was quite capacious, perforated at the bottom of a large ulcer, situated at about one-third of its length from its extremity, the portions surrounding the ulcer being gangrenous. Just below the orifice of communication between the appendix and the cæcum, was found impacted, a seed or stone with its exterior much softened, which appeared to be that of a large cherry or small plum.

At the time of death there seemed to have been no communication between the intestinal and peritoneal cavities; the adhesions of the perforated part to the colon preventing it.

The stomach contained a fluid similar to that vomited; there was no noticeable lesion of its parietes.

The mucous coat of the intestines was not involved in the inflammation, and contained, nearly throughout, only mucus colored by bile. The lower portion of the ileum and colon contained fæcal matter.

The bladder was empty.

The specimen presenting the lesion described, was exhibited by Dr. Gobrecht.

Several of the Fellows referred to similar cases that had fallen under their observation. Dr. Griscom mentioned one in which the foreign body was a watermelon seed; and Dr. Keating referred to one reported by Dr. Meigs, where a collection of fig seeds in the appendix had



occasioned the attack. A case was also reported by Dr. H. Hartshorne, in March, 1851, and another in April, 1845, by Dr. Pepper. In the former, a mass of hardened fæces, and in the latter, a grape seed, was the offending body.—*Trans. Coll. Physicians of Phila., March, 1856.*

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## ART. XII.—*Simple and Puerperal Peritonitis.*

Dr. KEATING inquired whether cases of simple idiopathic peritonitis, or of the puerperal form had fallen under the observation of the Fellows? He had, himself, met with one of the former description.

Dr. WALLACE:—About three weeks ago I was called to see a young man at a boarding house. It was on Friday. On the previous Tuesday evening he was well. I am unable to state from observation what his symptoms were in the interval, but when I saw him his pulse was thready, and his abdomen distended, but free from any spontaneous pain. He had been sitting up by the stove because he felt chilly. On the same evening he died.

Examination *post-mortem* revealed the existence of intense and general peritonitis. Indeed, the whole of the peritoneal as well as the visceral layer was inflamed, the subserous cellular tissue injected, and the cavity of the membrane was filled with a seropurulent liquid. The rapidity of the course taken by the disease had led me to suspect that it might possibly be due to some traumatic cause, but no perforation of the bowels or other similar lesion could be detected. I therefore regarded the case as one of idiopathic peritonitis.

In regard to the puerperal form of peritoneal inflammation, I may remark that I have met with two cases, and, as in one of them the course of the disease was somewhat unusual, and as I was able to obtain a *post-mortem* inspection of the body, a brief account of it may not be uninteresting.

On a Sunday morning the woman was confined, and her labor was quite regular in all respects. On the afternoon of Tuesday she had a slight chill and complained of pain in the right groin, which extended upwards, but it soon afterwards subsided. The secretion of milk was abundant, the skin moist, and the lochia but slightly diminished. In fact there was no symptom besides the pain alluded to. Pressure on the abdomen was not very painful. On Wednesday morning the breasts were full, and the general condition excellent; but the lochia were diminished, and the pain in the groin was more readily developed by pressure. At the fundus of the uterus, also, there was abnormal tenderness. The pulse was soft, perhaps twenty beats more frequent than before, but not excited. Leeches were ordered to be applied, and calomel with Dover's powders was given internally. Warm terebinthinate stupes were also used as an application to the abdomen. A few hours afterwards the pain had disappeared, but a state of collapse had ensued with sunken countenance, frequent pulse, &c. In the evening the pulse rallied and

beat 120 a minute. The pain, however, returned, and a renewed application of leeches was thought advisable.

On Thursday evening the pulse reached 170, but it afterwards declined, and the patient died on Friday night.

I was struck by the extreme mildness, in this case, of all the symptoms which are most characteristic of puerperal peritonitis, and believed that its termination would be favorable. But from the time when the leeches were applied, the countenance changed, and all the evidences of a mortal issue developed themselves.

An examination was made after death. The right ovary was covered with lymph, and filled with small and separate collections of pus; its tissue was readily torn, it was even less firm than a clot of blood found in the cavity of the uterus. This latter had no offensive smell. The left ovary was highly congested, and the corresponding Fallopian tube was of a chocolate color. There was no disordered condition of the uterus, and only *slight* peritoneal inflammation of its serous investment. But all the rest of the peritoneal membrane was intensely inflamed, and there was a large amount of serum, lymph, and pus in the cavity.

An interesting question presents itself: when did the ovarian inflammation begin? Did a condition exist previous to labor which tended to produce the subsequent disorganization? I rather am disposed to believe that it dated from the time of the chill, and I also suspect that the leeching, performed when it was, exerted an injurious influence. I am also inclined to think that in a similar case, it would be my duty to bleed with the first appearance of the local symptoms, with the view of checking or preventing a complete peritoneal inflammation, which, in this case, caused death, and which I believe did insidiously commence when the local symptoms first appeared.

Dr. KEATING:—In Dr. Wallace's case I cannot believe that such an amount of local inflammation and of such a grade, could have sprung up so suddenly, without producing more local and constitutional disturbance. I cannot account for such results as were exhibited in his case, except by supposing that a diseased condition existed previous to delivery, or that a latent inflammation had previously existed, and that the chill instead of announcing the onset of the disease merely indicated that it had already progressed to the formation of pus. I am confirmed in this belief by the fact that I have notes of three cases in which the patients had during the last weeks of gestation, complained of sharp lancinating pains over that region or that ovary, which was the identical spot in which the disease manifested itself after delivery.

It seems to me that during an epidemic of this fatal malady, it would be important for medical men to examine carefully the internal organs of generation of all puerperal women who might die during gestation; careful observations, under these circumstances, might prove whether or not this fearful poison had stealthily crept into the patient's blood before her delivery, and was only biding its time to destroy its victim.

So far from my experience confirming the propriety of copious venesection in these cases, I am more and more persuaded that those benefited by it are frank phlegmasiæ, the most amenable to treatment

generally, and differing in every character from that fearful blood poisoning which prevails epidemically, and defies all treatment.

I cannot agree with the views just offered by Dr. Wallace in reference to bleeding in these cases.

In a recent case I was called in half an hour after the occurrence of the chill. The patient had been delivered forty-eight hours. I resorted to copious venesections, say  $f\frac{3}{4}xx$  which immediately relieved the pain in the left iliac region, and reduced the pulse from 120 to 110 beats. The blood was neither cupped nor buffed. Immediately after bleeding, I gave a combination of opium and calomel, and applied warm fomentations to the abdomen. Prof. Hodge saw the patient, in consultation with me, three hours after; her pulse had already commenced to flag, and in six hours after, we had to resort to stimulants. I had never previously seen a case so soon after the attack, and never depleted so freely, and I can conscientiously affirm that I never saw a case sink so rapidly.

Dr. COATES:—Gentlemen should not blame themselves for the untoward event, in such a case as that related by Dr. Wallace; any more than in that of sloughing of the intestine, previously described by Dr. Gobrecht; nor does it follow that a contrary practice would have been more successful. The opposite of wrong, in matters of conduct, is not right, but another kind of wrong. It is notoriously beyond our power to prevent a fatal result in many such cases. I do not believe that it is possible, by bleeding largely, to insure or even afford any strong presumption of the cutting short of this disease.

I do not see the evidence that the occurrence of chill is necessarily indicative of the formation of pus in the case. Further, I am unable to discern the grounds on which it is supposed that the ovarian inflammation may not have existed previously to labor. The ovarium is an irritable part of the body, and it is very common for it to undergo great anatomical changes without the production of fever; even peritonitis does not always produce pain or fever. The cases, I believe, are easy of access; those which occur to my memory are from *Broussais's Phlegmasies Chroniques*.

Peritonitis may be induced by cold. In an instance under my own care, a case of rapid and mortal peritonitis was induced in a boy, by his being employed to clean out a bath-tub, in cold weather. Being fond of the cold bath, he remained a long time amusing himself amid the water. The marks of severe inflammation, in this case, lined the whole abdominal cavity and viscera, extending over the whole peritoneal surface of both sides of the liver; an appearance which I do not recollect having witnessed in any other instance. Where is the evidence that incidental and even apparently slight causes, an exposure to cold air and damp, for example, may not produce peritonitis after labor, when the susceptibility of the organs concerned in that function is, of course, extreme?

Dr. BEESLEY:—The case just related by Dr. Wallace is of a deeply interesting character; such a serious result following on symptoms apparently so little alarming. The difficulty is great of distinguishing such cases from those attended with similar symptoms, yet arising rather from irritation than inflammation.



I may, in elucidation, mention a case which I recently attended. A young and delicate married lady was delivered of her first-born, after eight months' pregnancy. She went on favorably, until the fifth day, when she was seized with a chill, headache, and pain in the left iliac region. I saw her about two hours afterward. She was lying on her back with her knees drawn up; complained of considerable pain and soreness on pressure. Abdomen somewhat tumid; had no stool since delivery; her nurse having been too ill to give her the needful attention. Her pulse was 110 and small, rising to 120 in the course of a few hours. Lochia free and milk abundant. She had daily applied cleansing ablutions externally, but a putrid odor was evident.

I directed at once a purgative of calomel, jalap, and aloes, to be followed in four hours, if no stool, by an enema.

The neutral mixture with elixir of opium was also given about every two hours, and warm stupes over the abdomen. Considerable relief was experienced in her feelings after the second stool, but the abdominal tenderness though lessened, continued until the third day, and the pulse was above 100 for two or three days longer. On the second day Dover's powders, in four grain doses every four hours, were substituted for the elixir of opium. Perspiration came on gently and was kept up by this treatment, and my patient was soon convalescent.

In the early years of my practice, I adopted the plan recommended by Dr. Dewees, and bled and purged freely in such cases, and I regret to say, with not the success I desired. But for the last eight years I treat them differently, seldom taking any blood from them, unless the pulse is full and strong, and then rarely more than 16 to 20 oz.

I usually commence with from 12 to 15 grs. calomel, with two grs. of opium, and follow up with four grs. of Dover's powders, every four hours, neutral mixture every two hours, and flannels wrung out of warm water to the abdomen, covered with silk oilcloth and dry flannel. I occasionally use some laxative or an enema to aid the calomel, but generally find that two or three stools of a dark color appear without their assistance, in twenty-four hours. All of these cases which I have seen from the commencement have recovered. Where I suspect putrid blood remains in the uterus, I occasionally use, I think with great advantage, injections of warm water into its cavity, by means of a metallic pipe introduced along the finger into the os uteri, from a glass syringe.

I fear that a poison introduced into the circulation from putrid matters may induce or aggravate the symptoms, and where these appear threatening a few days after delivery, I have seen no evil, but, on the contrary, favorable results from the practice.

Dr. GRISCOM:—I do not feel quite satisfied that the use of the syringe which has been described is altogether free from danger. In some *post-mortem* examinations of the recently delivered uterus, I have found the Fallopian tubes large enough to admit the little finger, and therefore consider that the operation referred to might cause liquid to be thrown into the peritoneal cavity.

In reference to large bleedings in the disease under consideration, my experience is adverse to their employment. In two cases which

occur to my mind, the attending physician bled so as to induce a completely anemic state; but both patients died.

Dr. BEESLEY:—The degree of openness of the Fallopian tubes after death, is no evidence, to my mind, that they are open during life, and soon after delivery. Were they in that condition, we should have two streams thrown into the cavity of the abdomen, when the uterus acted on fluid blood, at the time that its os is closed, or filled up with a coagulum.

Dr. CONDIE:—During a practice of thirty-nine years, I have seen enough of puerperal fever to strengthen my adherence to the belief, confirmed now by the conclusions of obstetricians in every part of Europe, and by the majority of those in our own country, that bleeding in this disease is altogether mischievous. It should never be forgotten that when the disease prevails, epidemically, the majority of patients will in general die, whatever may be the plan of treatment pursued.

If the views entertained by our European brethren are correct, puerperal fever is not a local disease, but a blood disease. Acute peritonitis may occur in the puerperal state and be cured by bleeding, but of genuine puerperal fever I defy any one to cure one case out of ten by antiphlogistic remedies. The only treatment of this disease, which can boast of any degree of success, is that which consists mainly in the use of the muriated tincture of iron. It has unfortunately happened that diseases of very dissimilar character and demanding very different plans of treatment, have all been classed under the one general denomination of puerperal fever, merely from the fact of their occurring soon after parturition.

In regard to the suggestion that clots retained in the womb and there becoming putrid may occasion the disease in question, I would remark that in this manner typhus, but not true puerperal fever, may be generated. Nor do I believe that the removal of retained clots by injections thrown into the cavity of the uterus would prevent the development, or retard the fatal issue of genuine puerperal fever for a single hour. Besides, the danger of throwing an injection into the peritoneal cavity is a very serious one, for experiments made in France have shown that such injections are liable to pass from the uterus through the Fallopian tubes into the peritoneal cavity.

As regards the mild treatment recommended under the circumstances pointed out by Dr. Beesley, I fully admit its propriety. Indeed, it was but yesterday that a case occurred to me, presenting the symptoms alluded to, and I obtained a similar result, by adopting the same simple plan of medication; cases such as these, however, cannot be considered as even mild attacks of puerperal fever.

The question at present of interest to us is, does idiopathic erysipelas now prevail in any part of the city simultaneously, with puerperal fever? I have seen several cases of the former disease myself, in the lower part of the city, and have been informed that both it and idiopathic peritonitis have been observed by other physicians in the same neighborhoods.

Dr HENRY HARTSHORNE mentioned that he was attending, at the present time, a woman in the southwestern part of the city, recovering

from symptoms ordinarily considered those of puerperal fever, after having been *bled twice*. He alluded to it because a majority of the testimony, this evening, had been against bleeding in puerperal cases. The amount of blood taken in this case was moderate, 3xij the first, and 3xvj the second time; and Dr. H. believed that the treatment which affords the best hope of cure in the greatest number of cases, is what we may designate in one word, as the moderate treatment: in proportion to the symptoms of the case. Bleeding, calomel, and opium; purgation and blistering, all aided in the treatment of the patient alluded to who was affected with what, from Hospital experience, Dr. H. should have considered very serious symptoms; but none of these remedies were carried to an *extreme* point. While recognizing, with Dr. Condit the existence of several pathological states under what we commonly call "puerperal fever," *e. g.* simple peritonitis, phlebitis, pyæmia, and epidemic or endemic puerperal fever, with or without peritonitis as a symptom, Dr. Hartshorne could not yet surmount the difficulty of distinguishing these in all cases, and especially at the time when it is most important, during the first day of the disease. He believed that we rarely have cases in which one of these conditions (unless it be simple peritonitis,) is isolated altogether from the others, so as to present unmistakable signs at an early stage. We see a resemblance in this, to erysipelas, in which the constitutional and local elements of the disease unite; sometimes the eruption, and sometimes the general disorder being prominent, and with this difference the treatment must vary essentially. — *Trans. Coll. Phys. Phila.*

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ART. XII.—*Treatment of Yellow Fever at Norfolk (Va.) during the Summer of 1855: by A. B. WILLIMAN, M. D.*

DR. Williman, in the May number of The Charleston Medical Journal, concludes his interesting account of the Yellow Fever in Norfolk, with the following exposition of his plan of treatment in this malady:

Those remedies which were employed in the Norfolk fever appear to have been designed either for the purpose of cutting short the disease in its incipient stage, or on the other hand with a view towards combatting symptoms as they successively arose. A candid opinion in regard to both these procedures must pronounce the latter most safe, since it is now generally conceded that we possess no heroic or specific remedies against yellow fever. The practice of salivation was indeed still relied on; but its advocates are now few, and I think that the experience of 1855 tends altogether against the future administration of calomel, except for its simple cathartic effects; employed otherwise in Norfolk, the results were generally bad, and increased tendency to hemorrhage, local and general, constantly followed mercurial ptyalism.

The combination of *calomel and quinine* in large doses, was a remedy in constant use by those who believed some similarity of nature to exist



between yellow fever and the intermittent variety. The testimony upon its efficacy seemed to me very variable; and the few instances recorded of success, happened in persons of strong constitutions, who were not afflicted with the disease in its worst form, *Quinine alone*, given after the febrile paroxysm had passed, or was nearly reduced, afforded perhaps more favorable indications. I knew of its decided benefit when administered as an injection, to a patient much exhausted by restlessness and continued vomiting. Physicians from New Orleans, who had larger acquaintance with the whole routine of quinine practice, used this drug but sparingly in Norfolk; and my own experience satisfies me in stating, that moderate doses at a late stage of the fever were alone admissible.

If any particular method of treatment deserves notice for its success, it was one eminently mild. Free but gentle movement of the bowels soon after the accession of fever, was generally produced by a few grains of calomel, either alone or in combination with blue mass. The form of pills was perhaps most employed from its ready passage into the stomach, and greater freedom from nauseating effects. Where the stomach showed no marked signs of irritability, castor oil was very commonly given, and amongst the blacks it constituted almost the only medicine during the early stages of fever. Its action, in all cases which fell under my immediate treatment, was prompt and efficacious, as well as safe when administered before the first 12 hours of illness had elapsed. In cases where vomiting persisted, there was free resort to saline cathartics, especially such as possessed effervescing qualities. After the administration of mercurials, and where necessity appeared to demand it, free purgation was often produced by any of the neutral salts. For my own purposes, I commonly employed sulphate of magnesia in a pleasant draught of lemonade, to which a few drops of nitric acid had been added in order to disguise any unpleasant taste. This old and apparently trifling remedy, from its easy administration in small doses, and active property, seemed to answer every purpose in keeping up a continued revulsive action upon the bowels. As the poison of yellow fever makes its first attack apparently upon the brain and great nervous centres, these parts should be the objects of early medication. With this view, it was my intention after reaching Norfolk, to test fairly the use of the cold bath upon the entire body. The want of means, and the class of my patients, however, prevented almost entirely any full employment of this remedy, and I was forced to a trial of cold effusions upon the head and upper parts of the body. Results of the most encouraging and beneficial kind attended the application, which was easy, and without much inconvenience to the patient. I frequently employed, with my own hand, some vessel containing two or three gallons of water, and poured it from a height of two feet upon the exposed parts. Relief to the agonizing headache and parched surface of the chest and limbs was prompt, while frequently an increased moisture began to appear over the whole surface, attened by greater repose and diminished fever. So far as my knowledge extends, all attempts at internal local medication upon the stomach invariably failed. The muriated tinct. of iron, once vaunted for its peculiar stypic virtues in arresting black vomit, was in our practice at Norfolk only productive of increased nausea; nor can I mention a single one of the large class of antacid remedies which gave more than mo-

mentary relief. Counter-irritation at an early stage of fever was generally made over the epigastrium, and with such results as gave to this remedy considerable value in controlling excessive vomiting. Frictions along the whole course of the spine with powerful stimulants, as turpentine, chloroform, &c., together with cupping upon the back of the neck, were also resorted to when there was apparent tendency towards the black matter formation. But at most, these means only delayed the dreaded symptom; and when any arrest occurred in the progress of black vomit, it seemed to be rather attributable to the direct powers of nature. In a few cases, where I employed strong opiate enemata, more repose was induced than by any other method of treatment which had been adopted. Local, and not general blood-letting, was the plan pursued at Norfolk; and it is probable that in the early stages of fever, depletion direct from the circulation, together with emetics, might have been employed oftener with benefit. As rapid prostration, in the late epidemic, very generally happened towards the period of crisis, there seemed obvious indication for supporting the system against fatal debility, and hence stimulants were added to some light nutritious fluid. Nothing seemed to me so easily borne as thin chicken water containing a little salt, and frequently the sick partook of it when fatigued with cold or acidulated drinks. During the actual stages of black vomit, a variety of means were used for some supposed stimulant and tonic virtues which they seem to possess; but I am not aware that the administration of brandy, champagne, or porter added at all to our knowledge previously entertained respecting alcoholic medicines in yellow fever.

On reference to my case book I find that during the epidemic one hundred and twenty persons came under my personal treatment. Of this number *eighty* were *whites*, and *forty* blacks and mulattoes. The white cases show a loss of *eighteen*, the colored races only *two*. One of the latter was a woman *æt.* 60, of nearly pure African blood, whose case presented a fever lasting between three and four days, accompanied with nausea and vomiting. No other peculiarity was seen in the discharges from the stomach except their thin and watery appearance, but free from discolored particles. The tongue remained soft and only slightly furred, while the jaundice in the eyes was quite distinct; skin was relaxed and cold three days before death; and the urine, although of a jaundiced colour, was considerable in quantity. The other case was in the person of a mulatto female, aged 50, of nervous temperament. Fever in the onset violent, rapid pulse, with excessive restlessness and anxiety. Jaundice was perceptible on the third day, and in the progress of disease extended itself over the whole body. Urine of dark orange color on the fourth day, together with black vomit. Delirium supervened, and death with convulsions ensued between the seventh and eighth day.

The following instances are recoveries from different stages of black vomit:

Mrs. N——, a lady of 70 years of age was attacked by fever of insidious form, but accompanied by constant nausea and vomiting. On the fourth and fifth day discoloration of skin quite distinct, and widely spread; delirium, with great prostration; discharges from the stomach thin, bluish-white, and covered with floating brown particles. She was

treated by opiate injections, and although the fever assumed a typhoid form, recovery came about slowly.

Child of Mr. B——, aged 8 years, dark florid complexion. Fever was intense, attended with deep suffusion of face and epistaxis on the third day; delirium constant, and alternations of great stupor, except at moments of vomiting. The matter vomited from fourth to sixth day was distinctly thin, colorless, and contained floating brown particles in abundance. Seventh day discharges from the bowels set in, and were almost entirely of grumous blood. The presence of bile increased as the intestinal hemorrhage diminished, and by degrees fecal matter could be perceived. This case was accompanied by extensive jaundice and marked changes in the urinary secretion, but convalescence went on regularly to a perfect restoration of health.

W. J——, a youth of fourteen years old. Violent fever, and much cerebral torpor, together with epistaxis in the beginning. On the fifth day extensive jaundice appeared, and hemorrhage set in. Nausea and vomiting had been constant; the discharges from the stomach were thin, without a trace of bile, and slightly specked by brown matter. Convalescence was slow, and the jaundice disappeared very gradually.

Daughter of Mrs. S——, aged 7 years. Attack of fever was violent, with deep red suffusion over the cheeks and breast; parched surface, and vomiting came on with the febrile movement. On the third day, when the evacuations of the stomach were thin and free from bile, characteristic brown particles appeared, while jaundice extended itself fully over the body. Recovery was regular, after subsidence of fever, which was complete on the fourth day. The peculiar character of the vomit in three of the cases above mentioned was sufficiently distinct to attract immediate attention on the part of those who acted as nurses, and was at once removed by them from the sight of each patient.

Suppression of urine was observed by me in a large proportion of my male patients. Although a symptom most commonly found in persons of advanced life, it was often present in childhood, but at late stages of illness. In those cases where I observed early diminution in the discharge of urine, or its complete cessation, fever of the most intense grade with great heat and redness over the upper extremities was always present. The tongue was, in the beginning of such cases, covered by a heavy brown fur, which soon became dry, rough, and stained, as if by tobacco juice, particularly at the root. The cases of suppressed urine were also indicated by an early and most obstinate torpor of the bowels, which yielded to none, even of the most powerful cathartic medicines.

I find upon my list four cases in which the reappearance of a menstrual flow was discovered. In three instances the discharge occurred respectively on the third, fifth, and seventh days, where a return to health happened. In the fourth, which terminated fatally, black vomit was already present before the catamena returned, and the restoration of the uterine function seemed like a critical hemorrhage which often supervenes in the advanced stages of yellow fever. So far as I could discover, the urinary secretion went on in my female patients far more regularly, and with less danger from suppression, than amongst the male class. A black girl, who was severely attacked by the prevailing fever at a period immediately before the menstrual return, continued



with partial suppression of urine for two days, which resisted every local application. At length the stomach appeared to take on some sympathetic action, and a most alarming hemorrhage ensued. The quantity of blood discharged in vomiting amounted to several quarts, and it was followed by prompt reduction of fever, and complete restoration to health.

In the instances of five or six sufferers, from intermittent fever, I saw a formidable character of the prevalent disease, strongly resembling the worst features of typhus gravior. The hemorrhage from the nose, gums, and tongue, came on very soon after each attack, and was so offensive that it was difficult to remain near the sick person. Black vomit in the present cases took on its coffee-ground appearance, without running through gradual changes, and putrefied rapidly after exposure to the atmosphere. Jaundice was constant in all the individuals, and I found it quite impossible to rouse them from a profound coma which supervened upon the other symptoms.

The following details regarding three cases of pregnancy, contain some points of interest:

Mrs. B———, the mother of two children, and in very great destitution, was in her eighth month of pregnancy when I attended her for an attack of yellow fever. Abortion was much threatened, but passed off in the course of disease, leaving behind it, however, a very serious disturbance in the functions of the stomach. Vomiting of blood, to great excess continued daily during a month, and when labor came on it was attended by severe bleeding, but without harm to the child or mother, both of whom are now doing well.

Mrs. C———, a young Irish woman, a stranger, and pregnant with her first child. She was visited by me, and found to be suffering with severe fever, with excessive irritability of stomach, and bilious vomiting. Towards the third day labor pains began to show themselves during the period of jaundice, before strength was far reduced. Hemorrhage of most alarming kind seized upon the stomach, and delivery of a dead child seven months old took place. The uterine flooding was out of all proportion to the discharge from the stomach, and the case rapidly assumed the darkest shade of orange color, which continued until death. Patches as deeply stained as mahogany appeared over the forehead and cheeks before and after dissolution.

Mrs. S———, of delicate form, and the mother of several children, was attacked by fever when in the last stage of pregnancy. I was present at the time of labor, and the skin was beginning to assume a yellow color. Delivery came about in the usual way, and a fine, healthy infant was born. The condition of the mother continued to improve, but the child, in 48 hours after birth, and during the night, grew ill, and died with every symptom of yellow fever upon the body.

\* \* \* \* The class who became chief sufferers were eminently poor, and they, under an existing state of evils, could find aid only in those services which were rendered by the physician. Regular attention to the sick, or any system of nursing, was not at hand; and often the medical assistant performed these duties, and administered his own remedies. I have made repeated attempts to ascertain the total number of cases which received medical treatment in Norfolk, but, hitherto, without a definite result. The population, at the close of the epidemic,

was stated by the Mayor of this place at 6,000 persons; and since nearly all suffered from an attack, whilst the ascertained mortality reaches to 2,000, a loss of one-third must have happened. During the month of September, my inquiries amongst our Southern practitioners, and also from resident physicians, afforded much more favorable returns than the above, and the loss varied from one-fourth to one-sixth upon a large number of patients of all classes.

### ART. XIII.—*Treatment of Yellow Fever.*

IN the North Western Med. & Surg. Jour., for April, 1856, a paper has been published having for its title—"A Synopsis of Yellow Fever, with its Pathology and Treatment, as it appeared at the Marine Hospital Quarantine, N. Y., during 1854 and 1855: by THEOD. WALSER, M. D., Assistant Surgeon;"—from which the following extract is taken, showing the mode of treatment pursued at that Hospital:—

As I observed, the first remedies employed were calomel or ol. ricini; each one operating as a cathartic, and producing copious brownish black stools.

In four cases, after the cathartic, only soda bicarb. was used. In one only can I report a happy result. In others it had the effect of changing the black vomit to bright red blood. In the autopsies of these cases, much blood was found in the stomach, and also to some extent, in the intestines.

In all other cases, large doses of quinine were administered immediately after the stadium invasionis and the operation of the cathartic. This treatment was continued for several successive days, and careful and dilligent observation leads me to believe *that whatever success we had in our treatment, we owe it to this remedy alone, at this early stage.* The use of quinine in yellow fever has had many and powerful advocates as adversaries, and although the view of a miasmatic cause impressing the nervous system, and producing the above-named pathological results, absolutely demands its employment, I am, nevertheless, not entirely satisfied that these views are correct, or that this peculiar nervous depression is dependent upon that ill-defined cause which we express by the vague term *miasm*. I had often opportunities to compare the close resemblance of the initiatory symptoms of pernicious, remittent, and yellow fever, and more particularly the afore-mentioned fact, that yellow fever frequently terminates in an actual paroxysm, immediately followed by death; all of which might induce me to classify yellow, remittent, and pernicious fever, under the general head of miasmatic fevers, and therefore employ the same "specific" for one and all. But if I consider the vast difference of the post-mortem appearances, no reasoning power, or even experience, could induce me to classify these diseases under one and the same head.

In remittent fever, the corpse is of a grayish-yellow, but in yellow fever it is of a deep yellow, with innumerable sugillations and ecchymoses

never found in the former. In intermittent fever, the blood is brick-red and watery; in pernicious fever, dark, with firm, fibrinous clots in the heart and larger vessels; in yellow fever it is brownish-red, forming very imperfect coagula in the heart, and never a fibrinous clot; rarely can we find a vestige of a jelly-like substance. The spleen in intermittent, enlarged and solid; in remittent fever, enlarged and so soft that the fingers pass through it the attempt to remove it; in yellow fever it is small and normal. The liver of remittent fever is bronze-colored, and enlarged and soft; in yellow fever, intense yellow, hard and small. I mention here only the principal pathological lesions of both diseases, but to my mind, sufficient to show the vast difference between yellow and remittent fever; the remedy for the one must not necessarily be the remedy for the other, or more probably, cannot be the remedy for the other. Yellow fever bears far more resemblance in its ultimate results to purpura hæmorrhagica, although the cause and the first symptoms differ widely from each other; this resemblance may also account for the use of tinct. ferri sesquichloridi, once so much in vogue during the epidemic in Savannah, in 1854.

Notwithstanding all this, I shall employ quinine in every case coming under my observation and treatment, until I find another agent better adapted to counteract this peculiar nervous impression, and to prevent the dissolution of the blood, with the consequent organic changes.

Our attention being further called to the constant lesion of the congestion of the brain; we applied leeches to the neck and head; and more particularly the ice-cap, which was universally followed by relief. Leeches to the epigastrium, so highly recommended by some writers, were also employed in a number of cases, and were generally followed by relief of the fulness of the epigastrium, and what was more remarkable, always relieved the pain in the back; care had to be taken with their application, as it was almost impossible to stop the bleeding.

Of unquestionable benefit I considered, in practice, never to allow the patient anything to eat during the first week of his illness: in two cases, where this strict rule was not observed, the patient's life was sacrificed in consequence.

I have endeavored to give a brief synopsis of our cases, with their pathology and therapeia; I am fully convinced of its imperfections, and more particularly as respects chemical analysis of the different secretions, and especially the blood, and also careful microscopical examinations of all the pathological products, so necessary to arrive at anything like a truthful result in our observations and studies; for only a thorough knowledge of the pathology of a disease can lead to a sound and rational therapeia.

ART. XIV.—*Treatment of Typhus Fever*: by EDWIN R. MAXON, M. D., Geneva, N. Y.

WHAT, then, are the indications in the treatment of typhus?

Shall we bleed, purge, and starve our patients, and thus increase the



debility which the morbid agent has produced? Or shall we strive to support the sinking energies of the system, and thus enable it to bear up under and throw off, with its various excretions, the debilitating morbid agent it has so unfortunately imbibed.

From my experience in the treatment of typhus fever, for the past few years, I am compelled to believe, that with a proper sustaining course of treatment, nearly every case of typhus may be arrested, and the patient convalescent, by the fifth or sixth day; and that very few need be kept in longer than the ninth day, if attended to in season, and before any serious local inflammation has taken place.

The indications then are, to remove from the alimentary canal, any irritating matter which it may contain; to equalize the circulation; to promote perspiration; and to support the sinking powers of the system by tonics and a due amount of proper nourishment.

I therefore usually give, at first, two or three blue pills, and follow with half an ounce of castor oil; use warm pediluvia, morning and evening, the first day or two; also rubbing the whole length of the back with a tepid infusion of capsicum in vinegar; and, generally, give the sulphate of quinine and Dover's powders, of each, grs. *jv*, every six hours, at first, for a day or two. I then discontinue the Dover's and give pulv. camph., gr. *j*, with quinine sulph., grs. *ijj*, every six hours, and continue till the fever is arrested, giving crust coffee, with milk, at first freely, as nourishment, and as soon as the stomach will retain it, toast every six hours; and, by degrees, other nourishing and digestible food, as the appetite gradually returns and calls for it.

Such are the means which I have found most effectual in arresting typhus fever; and even in cases in which, through neglect, or maltreatment, local inflammation has supervened, I have found this course to do well, in conjunction with sinapisms, dry cupping, or blistering, as the case may require.—*Buffalo Med. Jour.*, May, 1856.

ART. XV.—*On Treatment of Intermittent Fever by Iodide of Potassium:*  
by E. F. SANKEY, Esq.

SIR:—Ever since I have resided in this village, (now for five years,) I have been dissatisfied with the usual treatment of ague by quinine, as in some cases the disease yielded to that remedy, and in others did not. But I could think of no other treatment likely to be successful, though I tried many, including arsenic, till some three years ago, I read in a number of the *Medico-Chirurgical Review* (I forget which) that the German pathologists considered that congested spleen (ague cake) was the cause, and not the effect, of the disease; and I remembered that Dr. Williams had written on the efficacy of bromide of potassium in such a lesion; but not having that drug in my surgery, I determined to try the iodide of potassium instead, in the next case of ague that came before me, intending if that failed, to procure the bromide. But I am happy to say that the object of my writing is to state to my professional

brethren that I have used the iodide of potassium now in considerably more than a hundred cases, and have never yet failed in curing the disease very quickly. In some cases, where the disease has been of long standing, and the patient very much reduced, I have added a grain or two of quinine to each dose of the iodide of potassium; but my general prescription has been, for an adult:—*R. Potas. Iodid.*, ʒjss; *Aquæ Menth. Pip.*, ʒxij. *M. Coch. Mag.*, ij; 4tâ quâque horâ sumend.

So there could be no doubt what was the remedy that cured the disease. In proof of the value of this drug, I will only mention one case out of all that I have thus treated.

Mrs. Smith, aged 50, sent for me early last month, having suffered from tertian ague, off and on, since September. Not being in very good circumstances, she went to the wife of the clergyman of the parish in which she resided, who very kindly gave her some quinine, telling her it was no use sending for the medical man, as he *must* give her the same remedy. However, not getting well she sent for me. After hearing what I have related, and finding that she had a tolerable pulse, her bowels open, and motions healthy, with a clean tongue, I sent her nothing but the above mixture; and she never had a return of the ague after the second dose she took of it.

I shall be glad if, by inserting this letter, other medical men will try this remedy, and report to you their experience.—*Association Medical Journal*.—*N. Y. Med. Jour.*

ART. XVI.—*On Myeloid and Myelo-Cystic Tumors of Bones: their Structure, Pathology, and Mode of Diagnosis.* By HENRY GRAY, F. R. S.

THE author detailed the history of nine cases of tumors of this form removed during life, with a minute description of the results of his own microscopical examination of six of the tumors. The results at which he arrived were as follows:—That these tumors were not of a malignant nature, although in several of the instances given they have been so regarded both previous to and after removal by operation; that on the contrary, their minute structure bore the closest analogy with the normal constituents of the narrow and other elements of bone in the early periods of life: that their growth is confined to the osseous texture, or its investing membranes, the periosteum and dura mater; that they occur at a period of life when the normal constituents of the medulla exist in the greatest amount, and are developed in those parts of the osseous system in which those structures exist in a most distinct and well-marked form (all the cases given took their origin in the epiphysal ends of long bones;) that they are occasionally mixed with the other elements of bone in a rudimentary state, as fibrous tissue and cartilage, and even with bone itself; that they may probably occur in any bone; that since they are thus found to consist of an abnormal amount of some of the

normal constituents of the medulla cells, the name "myeloid" given to them by Mr. Paget is most appropriate (the author proposes to add the term "cystic" to such of them as present a mixture of cysts with the structure above described, and regards their fibrous element as most probably derived from the organization of lymph effused as the result of chronic inflammatory action, or from some abnormality in the development and growth of the fibrous element of bone;) that they occur in all the cases at present recorded at an early period of life, and that their growth is generally much less rapid than malignant disease, both which facts afford important diagnostic marks to distinguish them from malignant growths; that the absence of the malignant cachexia, of glandular lymphatic enlargements, and of diseased internal organs, combined with the facts that, although these tumors attain occasionally a considerable size, yet they present no tendency to ulcerate or obtrude externally, and generally retain some surrounding shell of bone within which they have grown, serve as additional aids to the surgeon in forming a diagnosis between myeloid and malignant growths; that they do not return when entirely removed; and that for all these reasons they are to be regarded as innocent tumors.—*Association Medical Journal*.—*N. Y. Med. Jour.*

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#### ART. XVII.—*Melanosis.*

IN the January number of this Journal, in a review of Dr. La Roche's work on Yellow Fever, allusion was made to the melanoid or black matter discharged from, and sometimes found imbedded in the mucous and sub-mucous tissues. The petechial dottings in the latter somewhat resemble the dottings of the skin made with Indian ink, and those more superficial dottings often noticed upon the skin of the apple.

The following examples of melanosis are copied from the American Lancet, taken from the Dublin, Jour. Med. Sci., and from the *Mém. de l'Acad. de Méd.*, also from the Med. News, (Phila.)

*On a peculiar black discoloration of the skin of the face:* by J. Moore Neligan, M. D.—Eliza D., aged 21, a dress maker, of leucophlegmatic habit, single, enjoyed good health until the disappearance of the catamenia two years ago. This was followed by an attack of erysipelas, recurring on the right side of the body at each monthly period. It continued for a year. About seven months ago, the erysipelatous affection was treated with tartar emetic in small doses, which induced vomiting at the time, and left a chronic irritability of the stomach, giving rise to daily emesis. In August, 1854, for the first time, some blood was observed in the vomited matter. In September she threw up about half a pint of reddish brown matter; the same quantity of a similar matter was vomited every morning for four or five days. In October, at the regular period, this black vomiting returned, and now for the first time a



dark bluish-black stain was manifested at the inner canthus of the left eye.—When Dr. N. first saw the case in December dark stains covered nearly the entire upper eyelid of the right eye, and partly that of the left; the under eyelids of both eyes were completely stained, and on the right side the dark patch reached the skin of the cheek. The color was precisely that of Indian ink; examined with a powerful lens, it was evident that the stain was unequal in depth, and was dotted over the surface of the skin; the dark dots corresponding to the orifices of the sebaceous glands; the skin was exquisitely tender. Dr. N., regards it as a case of *stearrhoa nigricans*, resulting not from a change of extravasation into the cellular tissue of the eyelids, but from an increased and morbid secretion of the sebaceous follicles of the region. The inference in regard to treatment is that local remedies will be of no avail, and that a cure can only result from restoring the normal action of the sexual organs.

*Case of Black Coloration of the Face.*—By M. Bousquet. The person was a married woman, twenty-one years of age, and previously in good health. After a violent, resonant, paroxysmal cough had tormented her for a few days, but had then yielded, she found her face gradually assuming a darker and darker color, until it looked as if painted with a thick solution of indigo. The color afterwards became still deeper, until her face resembled that of a negro under slight transpiration. By washing, the black layer could be removed, the skin then presenting a blueish black color, as the chin of a person having a strong black beard does after shaving. After a while, droplets of black fluid appeared at the surface, and, forming into a compact layer, gave the same appearance as before. Linen coming in contact with the face acquired stains that could only be removed by repeated washings. Commencing towards the end of August, the coloration had quite disappeared by the middle of December; and, with the exception of a re-appearance for a few days about a month after, she has since continued quite well. The only noticeable symptom during its persistence was severe cephalalgia.

*Indefinite Nature of Melanoid Tumors.*—Mr. Fergusson had an opportunity of showing his class, a very perfect specimen of what he terms “melanosis,” or melanoid cancer, connected with which were one or two positions which appeared to us of very practical import. The received pathology of such growths, at present, we believe is, that the melanic or black matter of melanoid growths is something of an accidental deposit, and not in any way significant of a specific series of the worst kinds of malignant growths or cancer—“black cancer,” as they are called in Edinburgh—several such tumors, and possibly this one, not being cancer at all. Mr. Fergusson remarked, it was very important to be able to assure patients in private practice that such a tumor was not malignant, or was malignant; it did not do to say a patient would die in twelve months, or to assure friends that that was the “utmost span” of existence on which he could calculate, when he would probably return in ten or twelve years apparently quite well. He also cited a case of this kind in which he was obliged to remove such a tumor, previously

operated on by the late Mr. Aston Key. It appeared to have effected a perfect cure. The patient got stout, and apparently healthy, but recently died of another disease, when a tumor of the melanosis kind weighing forty pounds, was found in the abdomen. This tumor had been possibly growing from the first, but for a period of eight or ten years was not suspected, and could not have been of a very malignant character, or it would have shown its effects earlier. In the present case, the man was in King's College Hospital, under Mr. Fergusson's care, five years ago. He then complained of excessive pain. A small vascular tumor appeared near the umbilicus, and was removed by ligature. The tumor, which put on much of the appearance of aneurism by anastomosis, subsequently grew again, and was then melanotic, but was removed by the knife; it now appeared cured; but soon after a tumor began also to grow in the groin. The more usual way of explaining these tumors, Mr. Fergusson observed, was, that they degenerated into cancer. He also stated a curious circumstance, that veterinary surgeons found melanosis the most common form of tumor in horses, and that they were much more common in those in which there was a want of pigment in the hairs and skin—in other words, gray horses. This point is not without interest, as bearing on another recently urged by Rokitsansky and others, that the blackness of melanosis arises from altered or dissolved hæmatine, and is pure carbon, not unlike the pigment in the negro, but certainly only accidental, there being, in fact, no such class of tumors at all, in a strictly pathological point of view, as "melanosis." An abundance of pigment occurs in non-malignant melanosis of the skin, appearing to arise, curiously enough, in the corium, or part colored in the negro. Where the black deposit is found in cancer growths, it (in the vast majority of cases) selects encephaloid, and gives a peculiar feature, like hæmatoid to fungus hæmatodes, to that special form of cancer. Here the prognosis of the surgeon must be very unfavorable indeed, and a few months may terminate a case, not differing very materially, in outward appearance, or sensible signs of blackness, from a tumour that may be merely recurrent, or even non-malignant. Encephaloid, Mr. Fergusson observed, in its tendency to infiltrate adjoining parts, to affect the glands, to reproduce similar growths in other parts of the body, and to return after removal, or as more commonly known, by the term medullary sarcoma, is, with or without this accidental development of black pigment, the most formidable and fearfully malignant disease with which the surgeon has to deal.

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ART. XIX.—*On the Absorbing Power of the Intestines in the algid stage of Cholera*, by Dr. A. HIRSCH, of Dantzic. Translated from the German, for the *Observer*, by WM. KRAUSE, M. D., of Cincinnati.

Though the space of your journal does not permit me to give a full report of A. Hirsch's elaborate and valuable review of the epidemics of

Cholera during the last few years, yet I beg leave to offer some extracts from it, which even now may be worthy of some attention.

Duchaussey, as many others, found by experiments on the external skin, that its absorbing power is entirely lost during the latter stage of Cholera. He applied sinapisms in a number of cases, which did not redden the skin, though left upon it above an hour. The skin felt cool and clammy, and was never seen to become hot and reddened. A slight rubefaction became perceptible, after the skin had got warm, and persisted even when the skin became again cool. Vesicants did not produce blisters even in a single instance; the skin appeared either normal under the plaster, or somewhat softened. Huebbenet evinced the loss of absorbing power of the intestinal membranes by chemical researches. He administered the ferro-cyanate of potassa per os, and never succeeded in detecting a particle of it after death, in the blood of the patient. A similar series of examinations made at the city hospital of Dantzic during the epidemics of 1853, led to the same conclusion. D. followed another method, which, though less reliable, yet is worthy of noticing. He closely watched the effects produced upon his patients by active drugs, such as quinine, iodine, belladonna, and nitrate of strychnia. He declares however, the results of his observations uncertain with regard to quinine, though it seems remarkable, that a patient who took 100 grains of quinine per os and anum within 48 hours, did not perceive the least sign of its action during the algid stage. After, however, reaction had come up and the urine was again being secreted, the characteristic symptoms, especially buzzing in the ears, made their appearance. As to the loss of absorbing power of the external skin, the following experiment appears highly interesting: The back part of the forearm of a patient suffering with cholera, was painted over with tincture of iodine, the volar side of the same arm with a solution of starch. Now, a strong current of electricity being directed to pass through this arm for ten minutes, not the least sign of the usual change in the color of the amylum could be observed. It seems, further, to deserve notice, that the skin of the arm did not turn red, and the commotions of the muscles were out of proportion to the strength of the battery used. Belladonna was administered in all possible forms and ways, without any symptom of its physiological action. It is an interesting fact, which D. mentions on this occasion, that the pupils of a patient near dying, into whose veins a solution of extract of belladonna had been injected, dilated to their widest extent within three minutes. D. regards the occurrence as an important therapeutical hint to the practitioner, inasmuch as the usual ways for therapeutical agents, intestines and skin, being blocked up in cholera, there is another passage left, the circulatory apparatus, which seems to favor the speedy action of our remedies. The same negative results, as before, were obtained also with the nitrate of strychnia. It was administered through the mouth, rectum, and subcutaneous cellular tissue. D. was bold enough to exhibit one and a half grains of strychnia in a single dose.

He condenses the results of his investigations in the following propositions:

1. Patients in the algid stage of cholera have lost the power of absorption, no matter whether the medicament be administered through



the mouth, rectum, bladder, skin or cellular tissue. (D. did not examine if the same applies to the mucous membrane of the lungs.)

2. The absorbing power is restored again in moderate cases in the state of reaction; in very grave cases, not before the discharges are entirely arrested, urine is secreted again and reaction fully established.

3. If the patient remains comatose, although the skin has become warm, and pulse can be felt, absorption, as in the algid stage, is found wanting.

4. Should, however, some absorption be observable (?), then it is so trifling, that no cure can be expected from the usual exhibitions of medicines.

5. It seems, therefore, quite useless, and sometimes even dangerous, to trouble the patient, with active medication, especially since the doses, usually being increased, accumulated effects might be brought about, when the system begins to react.

6. If any internal remedy is to be tried in the latter stage of cholera, it must be given through the veins. D. had sufficient opportunities to convince himself of the favorable results of such a treatment.

We shall mention hereafter some doubts which have justly been advanced against the conclusions drawn from the above observations, although it may be looked upon as a fact, that the skin and mucous membranes are deprived of their absorbing power during the algid stage of cholera.

Suffice it here to superadd the observations of Pearse and Marston, neither of whom could notice any absorbing power. They are inclined, therefore, to doubt even the absorption of gases by the lungs. For they found upon examination of the expired air, that it contains no appreciable quantity of carbonic acid. The patient was directed to breathe into a vessel filled with lime-water. Kletozinsky, who somewhat modified this experiment, arrived at the same conclusion. Bouchut (*L'Union Méd.* 127, 1854,) further proved, that the expired air of a patient laboring under cholera, contains nearly as large a quantity of oxygen as the inspired air, when the cyanosis has attained a high degree.

ART. XX.—*Fevers of South America, Malaria, Goitre, Small-pox, Lepra, Verugus, Uta, Sarma, &c. Anatomical anomaly peculiar in the crania of the Peruvian Races.*

In a Pamphlet of 23 pages, originally read before the California Medical Society by C. W. Brink, M. D., upon the state of Medical Science in South America.

The author says:—

In regard to the maladies, to which I propose making some allusion, the first in importance is Intermittent Fever. This is the most widespread disease in South America, and in relation to its etiology, the most interesting. Extending over the greater part of the continent, it

is found from the equator to the frontiers of Patagonia, and from the steaming vallies of the Pacific coasts in Peru, to the elevated plains of the middle Cordillera, down to the forests of Bolivia and Brazil, and makes almost uninhabitable some of the eastern coasts of the continent which are washed by the waters of the Atlantic.

Like the malarious diseases (as they are called) in our own Western and Middle States, it manifests itself in the ordinary Fever and Ague, or like the mild summer and autumnal epidemics in some places, while in others, it assumes a malignant remittent type—the well known scourge of tropical climates—and destroys life, or leaves patients sallow, emaciated, and almost invariably with hypertrophied spleens.

The effects of this subtle poison, upon the indigenous inhabitants of malarious districts, is too well known to need even a word in this place. In South America, as elsewhere, it makes very Edens deserts, and degrades their scanty denizens into mere vegetative beings, subject to all the forms of disease which follow in the train of malaria, and reduces them often to absolute idiotism. Like the capital of Brazil, where fevers were formerly unknown, the city of Lima has been recently visited by a severe epidemic of Bilious Remittent fever, of the congestive form, which was highly malignant, and destructive of life. In consequence of its being so alarmingly fatal, the natives call it the "Peste."

From what I have learned of its symptoms, course, and sudden fatality, it is what, in the Northern portion of the United States, is called the "Cold Plague."

The *Yellow Fever* it certainly *is not*, being never attended by "the real *black vomit*," by which I mean blood altered by its passage through the villous coat. Again, I have never heard of its being so *insidious* as the genuine Yellow Fever, nor is it marked by "the integrity of the mental faculties," which Boisseau thinks invariable in the genuine disease. In regard to the *cause* of this disease—this is not, of course, the place to discuss it.

The strength of all arguments upon a scientific question, lies in facts, and, presuming none, however trivial, that relate to the causation of periodic fevers, can be wholly devoid of interest, I may mention some that struck me in passing. The *facts* I am going to notice are not *new*, but merely corroborative of what have been observed elsewhere. They all go to show that the old theory of the causation of periodic fevers, by marsh air, or by vegetable and animal remains, is wholly without foundation in truth. I have seen diseases—supposed to be malarious—upon the borders of the desert of Atocama, where there is almost no trace of vegetation, as well as in loftier regions, where the low temperature would render the conditions usually supposed to be necessary to produce fever, *impossible*. Fordyce refers to a part of Peru, as being rendered almost uninhabitable by fevers and dysenteries, where there is an almost total want of water and vegetation. In the vallies of Santa Cruz and Misqui, in Bolivia, fevers are referred to luxuriant crops of *Capsicum*, or some vegetable growth accompanying it. This is a popular corroboration of the opinion expressed by Dr. Robert Jackson, "that fevers are caused by an emanation from living vegetables, through the exuberance of organic life—the excess of vital vegetable action."

In some of the vallies of Peru, where these diseases are fatally prevalent, a heavy fall of rain is supposed to increase their severity. This corresponds with the fact, that "in Africa the greatest mortality is during the rains."

There are places, such as sandy plains, parched and unproductive. which are pestiferous with fevers, entirely free from the supposed causes of malaria; and others remarkably *salubrious*, where wide marshes and lagoons smoke under a burning sun, and vegetable and insect life (unsurpassed for variety and luxuriance) go rapidly through their transitions and decay in the hot and stagnant air of tropic summers. Such are some of the facts which prove, I think, that we are mistaken in what consists the symbols of a sickly climate; and that fevers of great intensity are common in localities where all the sensible conditions testify to the healthfulness of the climate. There are other facts, interesting in many points of view, which perhaps merely add new difficulties to this puzzling department of medical inquiry that might be alluded to, but there is not time. Certain it is, that a false theory may survive if it be believed, but if known to be false, must be speedily overthrown. It is to be hoped the time is not far distant, when the profession will have arrived at definite opinions upon this question, and be no longer satisfied with vague and meaningless words about a mysterious something supposed to be malarious, or an occult quality in the atmosphere of sickly situations, to account for some of the most interesting phenomena, in the production of disease, that we are called upon to study.

I would mention in passing, that the natives of the Peruvian forest regions prefer the green bark, [*cinchona officinalis*,] of which they make infusions—supposing them to be more efficacious than the dry. Smaller doses cure: they also take it as a prophylactic against the fever.

Another interesting disease, much of which came under my notice, is Goitre. It is called by the natives of districts where it abounds, the "Papás," and sometimes grows to an enormous size, extending completely around the throat, like an inflated life-preserver.

The lower animals, as well as man, are sometimes affected, small Goitrous tumors having been found in foetal calves. In connection with this disease, in the lower animals, an Entozoon is often found, which introduces itself between the cutaneous and sub-cutaneous areolar tissue, and produces large malignant tumors and death. With respect to Bronchocele, as of most other diseases, it is more easy to say what is *not* than what is its cause—so many conflicting opinions obscure its etiology.

It was Saunders, I believe, who first opposed the opinion that it was caused by the use of snow water. I have seen it in places where such water was *never* used. It is true, however, that in localities where it is used, the lower classes, who drink that of an impure quality, are more subject to this disease than those who correct its impurities by filtering.

The only place in South America where I have seen Cretinism, accompanying bronchocele, is in Jujui, in Bolivar, a town beautifully situated, remote from the mountains, and having none of the conditions, neither of situation nor other local circumstances—usually supposed to operate as causes of these diseases in Switzerland and other infected localities. Is it not, therefore, probable that goitre is engendered by other causes—that it depends, neither upon the Hydrology, the Geology, nor



the Climatology of localities in which it is epidemic? There is a substance which abounds in both kingdoms of nature, that is contained in almost all natural bodies, and is always found where goitre prevails—I refer to *Iodine*. This agent acts, we are told by Pereira, “sometimes without any perceptible alteration in the functions of the body.” Lugol asserts that “it encourages growth and increase of size”—that it stimulates the lymphatic glands, is an universal opinion; and abundant experience has shown that extremely minute doses (especially when there is an idiosyncratic susceptibility) are sufficient to affect the system.

I have already remarked Iodine is found in the inorganic, as well as in the organized kingdoms, in every country where Goitre is known. Mineral springs upon the sides of the Andes, and among the Alps, and many vegetables, indigenous to Goitrous countries, contain it. Dr. Smith has shown that it abounds in fresh water plants; and Chatin, of the school of Pharmacy, of Paris, in a paper read before the Academy of Sciences, stated that in the course of investigations upon this subject, he found Iodine in Horse-radish and other Tetradynamia. It also enters largely into the families of Algæ and Fungi, which are used as food and medicine, some of the latter having considerable reputation in South America as remedies in this disease.

The source of the Iodine in the Goitrous regions of South America, is the superficial saline deposits found in vast crusts on either side of the Andes—deposits which are, of course, of marine origin. The waters of most of the streams east of the mountains, in the Argentine republic, flowing along the pampas, are brackish and saline.

The success of Iodine in the cure of Goitre, has led us to infer that it is a sovereign remedy—if not specific.

Now if it affects the thyroid gland as a *curative*, may it not also act as a morbid agent? If, as we know is the case, Iodine operates as a stimulant to the glandular system, may it not produce the diseased condition that it sometimes cures? Atrophy of the mammae and testes are not unusual affects of this agent. May not Hypertrophy and Atrophy though contrasting, in some respects, so strongly with each other, both be the result of *stimulation*, and increase or wasting be the effect of the same agent? To stimulate nutrition is to produce Hypertrophy. To stimulate absorption, is to cause Atrophy. Is not this the simple and true explanation of the apparently contradictory operation of this agent upon the animal economy? These are interesting queries—and I may be allowed to express the hope, that they will be more fully discussed by members of the society more capable than myself.

The direction, it appears to me, that inquiry ought to take, is with respect to the function of the Thyroid gland—for Pathology and Therapeutics, as well as Etiological science, have their bases in correct Physiology. Whether the belief I have expressed be correct or not, cannot at present be shown. Theories may be untrue, therefore valueless; but the facts on which they rest ought to be remembered.

No subject has attracted more the attention of medical men, than small-pox; and the following circumstances connected with that disease in Peru and Chili, are curious, and throw some doubt upon the history of its introduction into the new world.

The era assigned by Robertson, to its first appearance on this continent, is 1517, twenty-five years after its discovery. In a work by Montesinos, entitled "*Peruvian Annals*," reference is made to a malignant contagious disease, which desolated Peru, and numbered among its victims the celebrated Inca King Capac Yupanqui. The period of his death (if this author's chronology is correct) was about a century after Christ—an epoch when Peru had reached her highest elevation and extent: and the disease is said by Montesinos' translators to have been small-pox. In the sacred and historical records and in the traditions of the ancient Peruvians, as well as in those of the nations in the southern portion of the continent, we find abundant proofs that Small-pox existed there many centuries antecedent to the conquest.

Molina, in his "*History of Chili*," speaks of its having been introduced into Mouli, where it was fearfully destructive of life.

It seems to be peculiarly fatal to the Indian race, we recollect the destruction of the Mandans, a powerful tribe of Upper Missouri, and I have heard it remarked that it is also generally fatal to the Polynesian. Cow's milk is said to have been used by the *Aurocanos*, to cure Small-pox; and it is a singular coincidence that about the year 1779, milk was recommended in Paris, by M. Lassoné, for the same purpose.

When an Indian dies of this disease, his hut is burned; a custom which also prevails among the *Abyssinians*.

In the province of Tarija, on the southern frontier of Bolivia, there prevails that rare form of scaly cutaneous disease known to us as Lepra. It is there believed to be contagious, and an asylum, similar to the *lazaretto* which were once established over Europe for lepers, is set apart for the subjects of this disease; and, as in Scriptural times, the unaffected shrink with disgust from its inmates, who are left to die or recover, as chance or Providence pleases.

There are also found in various parts of *South America*, other peculiar cutaneous affections. Of these, the Verugas is one of the gravest. It is attended by sore throat, deep seated pains and fever, which is followed by a peculiar eruption. Abscesses or tumors then form, and from them, hæmorrhage—often so great as to destroy life, or to leave the patient exhausted and disposed to Phthisis—occurs. This disease is said to be caused by the use of certain waters, which affect the lower animals, as well as man. The Indians treat it by giving an infusion of a plant called Huajra, which operates simply as a sudorific, and of very doubtful efficacy. Stimulants are necessary, and the removal of the large hæmorrhagic tumors by operation. Keeping the wound open, to promote suppuration, is recommended by Tschudi. Another disease said to be peculiar to Peru, having some features in common with Cancer, and which is even more fatal than the Verugas, is the Uta. The Sarma, a kind of Eczema, which produces scabs, and leaves purple blotches, resembling but having no connection with Syphilis, is another example of the local diseases, which prevail in Peru.

It is remarkable that some races suffer from one, some only from another of these baneful scourges; and it is equally strange that almost every valley and district has its peculiar disease; they depend, doubtless, upon some unknown quality of the climate.

It is not unusual to find as sequelæ to these diseases, serious lesions, sometimes in the form of indolent ulcers, upon the lower extremities, which have not, however, any of the characters of the original disease.

As to treatment—the great difficulty to be encountered is the over-officiousness of friends, whether old women, quacks or physicians—then, instead of attempting to cure the disease, or its consequences, by name, as many do, careful inquiry into the peculiarity of the place in which the disease was contracted, and the exhibition of remedies appropriate to the symptoms, will be the best that can be done for the patient.

The native practice is, to pursue old womanish routinism, as though one ointment, lotion, plaster or poultice, were a panacea to be employed in all cases indiscriminately. Indeed, the fatal termination of severe and malignant diseases is often hastened and the patient's sufferings increased a thousand fold, by the application of numerous substances, which, in the very nature of things, can have no other than a harmful effect. The sick, however, are proverbially credulous; accordingly, armies of empirical knight-errants, who are ever ready to enter the lists against science and common sense, spread themselves over the land, and besides keeping down the excess of population, they pamper the cherished prejudices of the vulgar. But to return. The right understanding of these diseases, as indeed of all others, is in one sense half their cure; to consider this subject in detail, would, however, exceed the limits of my paper, and I must pass on.

The *Veta*, or (as it is called in various localities) *Puna* and *Soroche*, that distressing complaint caused by rarefaction of the atmosphere, in the elevated regions of the Andes, has a curious feature or two, which I may be permitted to mention. It is attended by violent headache, with fulness of the superficial veins, difficult respiration and coldness of the extremities; often epistaxis and even hemoptysis are produced by it.—The attack usually comes on, *not* at the point of greatest elevation, but below, and often when making the *descent* of a mountain. Bloodletting is often necessary to give relief. The natives use garlic, crushed, and in bolus, for themselves and animals, both as a preventive and during the attack. The opinion prevalent among the learned from the remotest times, that atmospheric air becomes vitiated by gathering poisonous qualities from mineral exhalations, is still popular in South America.—One of the synonymes of this condition, the *veta* or *vein*, is derived from the belief that it is caused by metallic veins, diffusing around a poisonous infection; many suppose the noxious metal to be Antimony. Why these distressing symptoms are less felt at the greater elevation, than when making the *descent*, or why *Allium* relieves them, I do not know.

There are other interesting points touching the diseases, and means resorted to for cure, in South America, both curious and instructive, that might be briefly alluded to, were there time, but my paper is already sufficiently lengthy. If the patience of the Society will permit me to mention an interesting osteological anomaly found in the Peruvian races, I shall have done. According to recent observations made by Tschudi and Rivers, three distinct races dwelt in Peru, before the foundation of the kingdom of the Incas.

The cranial configuration of these natives, (called the Chinchas, Ay-maraes and Huancas) is so distinct as to have enabled those gentlemen



to assign each its geographical locality. In them all is found the anomaly (which is a distinct inter-parietal bone) that I have alluded to.

This bone, as its name indicates, will be found, says Tschudi, "placed between the two parietals, and having a form more or less triangular, whose sharpest angle is above, and is bounded by the posterior edges of the parietal bones, while its base attaches itself to the occipital bone by a suture which runs from the angle of the union of the temporal with the occipital, a little above the semicircular line, to the similar angle on the opposite side. It follows that this inter-parietal bone occupies precisely that part of the occiput which in other crania is occupied by the upper portion of the occipital, and which is connected with the parietals by the lambdoidal suture." After a year, union with the occipital is not completely effected except in the middle, and a furrow shows a trace of the suture, which is not obliterated even at the most advanced age, and may be easily recognized in *all* the crania of *all* these races. I have examined many Peruvian skulls, taken from ancient tumuli, and in none was it absent.

The length of the inter-parietal bone in a youth ten or twelve years of age, examined by Tschudi, was four inches at the base, and an inch and ten lines high; dimensions which sufficiently prove that this singular formation is not to be confounded with that of the small supernumerary bones, called *Wormiana*, which are sometimes found between the parietals; from these it is distinguished by largeness of size, regularity of form, and uniformity of shape and position; so that the inter-parietal bone is a true anomaly. It was first mentioned by Doctor Bellamy, and has since been examined by other observers.

It is a circumstance worthy of the attention of learned Anthropologists, that there is thus found in one section of the human race, a perpetual anomalous phenomenon which is wanting in all others, but which is characteristic of the ruminant and carnivorous animals.

I am aware that this is a subject too interesting and important to be discussed in the concluding paragraph of a sketch paper. Having relation to the great question of the unity of our species, I feel incompetent to subject it to scientific analysis and criticism, and merely mention it as one of the most interesting of many facts that fell under my observation during an extensive gallop through South America.

## REVIEWS.

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REV. I.—*Digestion and its Derangements; the Principles of Rational Medicine applied to the Disorders of the Alimentary Canal*; by THOS. K. CHAMBERS, M. D., F. C. P., Physician to St. Mary's Hospital, and Lecturer on the Practice of Medicine: author of "Decennium Pathologicum," &c. pp. 441 8vo. New York: S. S. & W. Wood. 1856.

INSTEAD of writing a formal review, it is proposed to ramble over the field occupied by this work, making such remarks as may be suggested by a slight survey of the same.

"Digestion and its Derangements," as investigated by Dr. Chambers, constitute an octavo of considerable size, handsomely printed; and withal replete with instruction in Gastric science and the kindred sciences which bearing upon the former, are here converged to a focus by an author who thinks, writes, and reasons with perspicuity—one who is acquainted with the researches of his cotemporaries, and not incapable of appreciating the value and generalizing the principles of their researches in regard to these fundamental subjects. Dr. Chambers has not worked the British, so much as the Continental mines of Gastric chemistry, physiology, pathology, therapeutics, and pathological anatomy. But to adopt a mining phrase, he has been "prospecting" in the Germany chiefly, but has not quite overlooked America. Dr. Beaumont's Experiments, thanks to foreign republications of his book, are well known to European authors who desire a solid basis for their speculations upon the natural history of "Digestion and its Derangements." Dr. Chambers might have enhanced the value of his work by referring more fully to this source. German Gastric, chemical and physiological research is great, extending and promises much benefit. But the simple physical experiments of the late Dr. Beaumont, laboriously repeated from year to year, directly upon the human subject, form, not kaleidoscopic views, and dissolvent scenes of the chemical laboratory, but a rough, massive, yet an imperishable light-house to guide the future explorer.

During the last century, the Abbé Spallanzani, whose works to the discredit of the present generation, are too little known, pursued, upon the subject of digestion, (though in the inferior animals) the same line

of research adopted by Dr. Beaumont, namely: the physical and vital, rather than the purely physiologico-chemical.

By the way, it may be allowable in this place to remark, that Alexis San Martin, the subject of Dr. Beaumont's experiments, having lately gone to Europe to submit himself to the examination of the learned, it remains to be seen what further discoveries he may be the means of eliminating. It is not probable that San Martin will ever again undergo experimentation so prolonged and varied as that made in the backwoods of the North-West, as reported by Dr. Beaumont. It is said that these experiments on San Martin, even in his younger days, and in a constitution naturally good, impaired his health, and for a time kept him rather thin in flesh.

In the work under consideration, Dr. Chambers has in the first part condensed much important information, particularly in reference to recent physiological and chemical researches in Germany, illustrative of the Digestive organs and their functions. While the author gives a lucid, yet brief *aperçu* of these researches upon vital processes, he laments the utter sterility of kindred investigations among his compatriots, adding, "That when the English government affords equal facilities for the devotion of some of its subjects to a philosophical life, as the German and Russian, then the authorities in physiological works will have a more home nomenclature. At present, let us be content to thank our neighbors for fruits not of native growth."

Dr. Chambers' criticism upon the English government, however just, might, if uttered in the North American Republic, subject him to the suspicion of being *non compos mentis*, seeing that what science soever fails in securing the greatest number of votes and dollars, is, for the most part, deemed from its unavailability, but little better than an insane delusion, unworthy of the great mass of Republican politicians, who, under the pretence of "extending the area of freedom" or some other popular abstraction, virtually adopt a very selfish principle, namely: all for me—nothing for you. The times will have greatly changed, ere they will entertain the idea of "affording facilities" for the study of physiology, &c.

Dr. Chamber's chief merits or demerits as an author must lie in that portion of his work, amounting to about half of the volume, in which he advances his own opinions and curative methods as tested at the bedside. In this, the practical department of his work, he neither dives deeply into the vital chemistry of his German authorities, nor does he, as usual, give a farrago of prescriptions, frightful to look upon, and worse to swallow, but developes the principles which should guide the practitioner, and which will suggest the desiderated formulæ, should any



be expedient or necessary. There is a class of practitioners, (alas! how many!) who flatteringly call themselves "*practical men*," who repudiate physiological, pathological and therapeutic researches, and who say, "give us a prescription to cure yellow fever! dysentery! dropsy! fits!" &c.\* "*shreikers*" are they for the ends, but contemners of the means of scientific advancement in the art of healing. These so-called practical men who repudiate elaborate treatises and prefer prescriptions, should not forget the difference in individuals as it regards original constitution, acquired habits, and the peculiar circumstances whether favorable to health or otherwise, should all be considered before writing R.; as well as the special characteristics of the malady, its nature, intensity, tendency, &c., a multitudinous combination of potential and actual conditions, which the empirical R., aforesaid, cannot *per se*, solve, not being the symbol for reason, much less "The Critic of Pure Reason," as a Kantian would say.

The prevalent paradoxes, and even contradictions concerning the appropriate quantity and quality of diet for the sick which some of the most celebrated masters in medical science are wont to teach to their disciples as reliable generalizations must very often be puzzling. The maxims *starve a fever! feed a fever!* and the like, viewed as invariable rules for the treatment of any fever or malady, are neither conformable to the teachings of physiology nor pathology, unless as in the case of medicine, they be applied with great discrimination. And here, a slight retrospective allusion to the diet question (now so greatly modified) may interest junior readers not born and bred under the late *régime*.

The late Prof. Dewees, (honor to his memory!) one of the ablest and most voluminous writers in this Republic, thus wrote and lectured a few years ago upon the subject of Diet in Puerperal and other Fevers:—"Food containing much nourishment, or any stimulus, should be carefully withheld; it should be restricted to toast-water, thin barley-water, molasses and water, thin rennet whey, balm tea, or lemonade. Every shape and form of animal substance should be peremptorily forbidden—no chicken water, or beef tea should approach the lips of any fever patient. It was not without surprise, indeed we might say astonishment, that we saw enumerated in the list of antiphlogistic articles in the treatise of Hey & Armstrong, 'chicken water,' than which few things, in our opinion, can be more improper."—*Dis. Fem.* 445.

\* The late Editor of this Journal, Dr. Hester, who felt a boundable pride in the mission of the Journal, remarked on several occasions to its present editor, that, as he contributed but little to its original department, he felt the more free to say what its readers expressed in their letters concerning its character; he generally summed up these in two extreme classes, one class declared that they had derived more information from the essays and discussions in the Journal, than from all the books they had ever read, while another class affirmed that they did not care about having learned essays and discussions, but they wanted prescriptions how to cure diseases!

Dr. Adolph Meuhry, of Hanover, in his work "on the Comparative State of Medicine in France, England, and Germany, during a journey into these countries in 1835," (Prof. Dunglison's edit. Phila., 1838,) thus sums up the Dietetics of the French and English Hospitals, twenty years ago :—

"The English long since said to the French, that they permitted their patients to die, while the French charged the English with killing theirs. When you hear the prescription in a French hospital, you are astonished equally at the severe regimen and the absence of medicine. A quarter of a potion, a loaf, a soup, decoction of rice, syrup of gum, frequently form the nourishment, or rather the vehicle of the remedy. Then there are regular potions, pisans, liniments, decoctions, cataplasms, pills, frequently bearing the same name in different hospitals, while their ingredients are varied, such as calming potions, potions béchiques, spasmodic potions, &c. Remedies which do not demand a small or very exact dose, are taken in the form of a particular drink. The patients are kept so low, that those with chronic diseases often entreat the physician, while he dictates his prescription for the day, for another quarter potion or an additional loaf. Nay, they actually have often pain in the bowels caused by hunger. The quantity of potions, too, which are administered, cause disgust, so that more cures are effected by this means and by hunger, than by the remedies employed." 50.

"The diet, which for the most part is alike for all English hospitals. is the following:—

1. *Full Diet*.—For breakfast, one pint of gruel or rice; at noon, three quarters of a pound of meat, one pound of bread, half a pound of potatoes, one quart of table beer; at supper, one pint of oatmeal gruel, or rice broth.

2. *Half Diet*.—Morning, one pint of oat gruel, or rice broth; noon, half a pound of meat, three quarters of a pound of bread, one pound of potatoes; evening, one pint of oat gruel, or rice broth.

*Small Diet*.—Morning, tea; noon, quarter of a pound of meat, half a pound of bread, half a pound of potatoes; evening, one pint of oat gruel or rice broth.

4. *Fever, or Spoon Diet*.—Morning, tea; noon, half a pound of bread or sago, instead of a part of it; evening, tea." 100.

The following extracts from Dr. Chambers' book will show the contrast between the past and the present system of dietetics, also, Dr. C.'s mode of applying the principles of Rational Medicine to food and drinks.

SECTION 1.—*Spare Diet as a Remedy*.—The diminution of the quantity of ingested nutriment in acute illness is so instinctively taught us by nature, that nobody probably was ever bold enough to sustain an opinion contrary to such an obvious law. The quantity and quality of the food ordinarily taken by the healthy body invariably requires modification during even the slightest derangement.

The natural explanation of this is, that the power of absorbing nutriment from the alimentary canal is more or less arrested, and that therefore the ordinary amount of victuals is an excess, and constitutes a foreign noxious body. It is not improbable, too, that in some cases the

power of continuous renewal of the tissues, or the fixing of the liquid nutriment in the solids of the body, is arrested to a still greater degree even than the power of absorption, and hence that an excess may be absorbed and remain in the circulation, as some of the semi-vitalized substances which are familiar in morbid fluids. For the first case, a simple diminution of the quantity taken at once would suffice; for the second, a modification of quality is necessary.

These truths, acted on by a prevalent spirit of ascetism derived from false views of moral nature, have led to two very common fallacies—first, that an *over-nutritious* diet is a cause of disease; Secondly, that the same diminution of nutriment which assists in the *cure* of disease, would *prevent* it, if persisted in during health.

The rich man's table is injurious to him, not because it groans with plenty, but when that plenty appears in the shape of greasy, over-cooked, concentrated dishes, flavoured with essential oils and alcohol in condiments and stimulants—when the aliments are half putrefied or half fermented to gratify a desire for novelty—when, in fact, a quantity of drugs and foreign noxious substances are taken with the food, so as to impede the absorption of proper nutriment, and arrest healthy metamorphosis. Such a diet, instead of being too nutritious, deprives the most essential part of the frame—the muscular—of its proper supply. The only tissue which it can contribute to augment is the adipose, and even that is the most usually unable to derive its natural supply from the altered oleaginous matter. The results of such mismanagement of the body are, not the *increased* metamorphosis which would be the consequence of increased supply, but the manifestation of *arrested* metamorphosis in gout, rheumatism, biliousness, deficiency of gastric juice, painful digestion, weakness, anæmia, neuralgia, hysteria, &c.

The principle of cure common to these disorders is, to enable the alimentary canal to digest and absorb as much normal nutriment as it possibly can, without impeding its action by a load of foreign matter.

When this argument is clearly set forth, it is obvious enough to medical men, and does not require to be insisted upon. But it does require to be explained to patients, who, led away by some semi-moral popular writers, suppose that disorders which they are conscious are brought on by eating too much, can be best treated by eating too little.—Hence they often aggravate their state by protracted fasts, by innutritious food, and abstinence not only from unwholesome, but from wholesome diet also.

It very often excites the astonishment of these patients, after having it explained to them that their complaint arises from over-eating, to be told to increase the number of their meals. Yet such is in most instances the best way of meeting the case. Small quantities frequently taken are the best device for introducing into the system a full supply of nutriment without overloading the alimentary canal. During the day, four hours is the longest time that an invalid should be allowed to pass without eating something; and for some two hours is a sufficient interval. Very soon the appetite begins to accommodate itself to these habits, and the little meal that is committed to the stomach at once, instead of lying dormant in the paralysed organ for hours, as was the case under



former customs, is enabled to pass away rapidly. Natural hunger gives warning of this improved state of things.

Prejudiced patients are apt to complain that under this plan they never "enjoy" a full meal; that their dinner, luncheon, or tea, or the like is "spoiled" by a nameless repast taken so shortly before. So much the better; the enjoyment (so-called) of eating as much *at once* as other people, is the very thing that keeps up their complaint. Their comfort should be, that they are enabled, in the prescribed mode, to *digest* as much or more than even their healthy friends.

Small, frequent meals and light digestible diet should, then, be looked upon as the complete antithesis of spare diet, and the distinction should be pointed out to the patients put upon it. At the same time it should be explained, that though their complaints arise from *eating* too much, they do not arise from *digesting* too much, but often the contrary; and therefore thus are to be cured, not by offering the alimentary canal too little, but by offering it in such a form as can be taken up.

But there are classes of complaints, before alluded to, where the cure is doubtless hastened, or perhaps can be effected *only* by a temporary diminution of the quantity of nutritious matter submitted to absorption. Whether albumen and fibrin become actually converted into the semi-vitalized products found in inflammation, rheumatism, gout, and perhaps some other disorders, or whether their presence causes the increased conversion of tissues into the semi-organizable fibrin of inflamed blood, lithic acid, &c., is not known; but it is certain that the symptoms connected with the presence of those morbid matters yield sooner when the food contains the minimum quantity of the said nutriment consistent with life. Inflammations, acute rheumatisms, and acute gout, get well quickest in those patients who can best bear starving. So very often, too, especially in acute rheumatism, do relapses follow closely on the increase of albuminized matters in the dietary, that it is impossible not to be struck with the advantage previously secured by the abstinence from these articles.

But it cannot be too often explained, both to patients and practitioners, that the low diet which is a means of cure, is by no means the most proper mode of preventing a *recurrence* of the disorder which has been removed by it. Those are most likely to avoid disease whose bodies are in the strongest condition of health; and those are most likely to attain the strongest condition of health who absorb and fix in their bodies the greatest amount possible of the normal constituents of the tissues. The reduction of the diet to the smallest quantity consistent with life renders the body more liable to derangement; and when that derangement does come, it is then all the more difficult to apply the remedy of spare diet which, in better nourished constitutions, is so effectual. Gouty, rheumatic, inflammatory persons, and in fact all those subject to complaints for which an important remedy is the diminution of the amount of absorbed nutriment, should in their healthy intervals prepare themselves by wholesome sufficient food for the application, when necessary, of a rigid regimen: remembering that they are by this course at once arming themselves against the disorder, and preparing a place for its remedy in case it does come.

Another advantage of a generous diet is, that it allows of a high degree of destructive metamorphosis without consequent danger to the body. By its means, during health, water in full quantity, neutral salts, &c., and during illness, or for the relief of chronic complaints, mercury, antimony, purgatives, and other increasers of destruction, are enabled to be taken under circumstances which would be rendered impracticable by spare diet. The full supply of nutriment fills up with healthier constituents the blanks which we desire to occasion by the removal of the abnormal or degenerated tissue.

It is by this means, and by this means alone—by well-chosen diet, in conjunction with well-chosen medicines—that we can ever hope to combat that tendency to degeneration in the interstitial frame-work of the body which the microscope is daily revealing to us as the cause of almost all chronic complaints, and which has been conjectured, with a fair show of probability, to be becoming more and more ingrained in the human race. To hasten the moulting of the effete abnormal substance, and to supply that which the invigorated powers can convert into active, healthy substance, is the only rational mode of meeting this state of things, which morbid anatomy teaches us is so common.

*The use of Alcohols by Invalids and Others.*—The employment of alcoholic drinks is indicated in diseases—

1. Where the pathological condition limits the due supply of nutriment, and the repair cannot therefore equal the normal destruction.
2. Where the destruction is so excessive that normal repair cannot equal it.

Under the first head come all acute typhous conditions, and in fact all acute disease, not excepting inflammatory ones, where the “nervous” energy (as it is vaguely called, meaning vitally in general) is defective. The use of wine in pneumonia in surgical injuries, and in general the not being frightened out of stimulation by the anatomical termination in “*itis*,” has saved many a life of late years in this metropolis; and although perhaps it may not so often be required in the more bracing air of regions to our north-east, still, even there the practice is gaining ground against prepossession, showing that it is really beneficial.

But a case more nearly related to the subjects of the present volume is that chronic one where the alimentary canal is habitually unequal to its duties,—that of the “poor creatures” alluded to at page 300. It is certain that the habitual daily use of a small allowance of alcoholic drinks bestows on this large class the nervous energy necessary to digest enough food to exist upon, and to get through other vital functions. By this stimulus they are enabled to be useful members of society, instead of the mere drones they must become during the rest of their existence under a “total abstinence” regimen.

Whether the inefficiency of the body for vital functions arises from imperfect lungs, imperfect stomach, or any other of the blood-making viscera, the use of alcohol makes it more vigorous, more able to support the fatigue of existence (for to the invalid mere existence *is* a fatigue) and to perform the ordinary duties of life.

There are two objections to the habitual use of alcohol, often urged by total abstainers, which require discussion. One is, that the affect of

it is only *temporary*, and therefore that when it has gone off the consumer is at least in no better, and most say, in a worse condition than he was before. The second is, that *use must lead to abuse*, that moderation is the first step to excess, and that the original effect can, after a time, be produced only by a continually increased dose.

To the first I must concede, that the *immediate* effect is indeed only temporary. But that is no just accusation against its utility. The *secondary* effect may be, and *is* in proper cases the enabling the body to assimilate food which, without its aid, would have been unassimilated, to take exercise and perform normal duties which would otherwise have been unperformed. The immediate effects of meat, of water, indeed of every influence to which the individual is subjected, are temporary, but still no one objects that to them.

It may be freely granted that both the primary and secondary effects of food have a value infinitely greater than that of alcohol, and that alcohol cannot take the place of food. But in cases where only a limited quantity of the latter can be taken, it is good economy to limit the metamorphosis which demands more than can be given to it. And how numerous these cases are, how probably in many large classes of our brethren they may constitute a majority, is too well known to the reflecting physician.

The second position—viz., that moderate indulgence leads eventually to excess, has to support it the practical fact that exceders certainly do generally begin by moderate indulgence; indeed, it is difficult to conceive their acquiring the habit in any other way. But to ground an argument for abstinence on this is to fall into the errors of ascetics, who would proscribe female society as leading to unlawful love, never change their dress lest vanity should be gratified, and avoid speaking in order not to sin with their tongues.

The special and somewhat insidious argument by which alcohol is exhibited as that pleasure the use of which peculiarity tends to abuse, the statement, that *in order to produce the original effect, the dose of it requires to be gradually increased*. It is stated that so much depression of vital energy follows the excitement arising from the stimulus, that what was at first sufficient is powerless, and an augmented quantity is demanded, which again produces augmented depression and demand for a further increase.

Now there would be a good deal in this argument if the depression and the arrest of metamorphosis, which are the consequences of alcohol, were permanent or everlasting—if something was taken away which could never be restored; it would be valid also if the habitual temperate indulger wished to keep up a continuous excitement. Such however is not the case; the system has time to recover itself before the instinctive accessory is again resorted to, and is agreeably benefited by exactly the same quantity as before; for no one who calls himself temperate would think of taking alcohol with a following meal till the effect of that taken at the previous one had gone off. As a matter of familiar fact, men take their pint of beer or wine daily with their dinner for years, feeling daily the same beneficial exhilaration from it; and when on festive occasions they increase their allowance, the same result always accompanies the excess.



The fallacy of the supporters of "total abstinence" (to use the technical term) lies in this: they assume, or allow to be assumed, that the individual man consists always of the same identical particles of matter, and that an impression made by a temporary influence is everlasting.—But such is not the truth. Constant change—perpetual metamorphosis—is that in which life consists; and the same atoms acted upon by a stimulus to-day, do not remain to be acted upon to-morrow. The body therefore does not become used to an habitual stimulus, if the whole circle effects of that stimulus are at each renewal allowed to be gone through—and for this reason, that it is not in fact the same body as it was before; daily food has prepared a new tissue for the daily work; and the renewal of the stimulus, supposing organic injury not to be done finds new matter in the old form to be acted on in the old way.

These statements of the fallacies in the physiological basis of teetotalism, are to the majority of my readers perhaps merely proving a point which they never denied. Yet I cannot think them entirely useless, even then. For we must all confess a certain kind of attraction for arguments, however specious, which claim to be aspirations after the moral amelioration of our race; and we are by education and religion inclined to look with suspicion on any habit which is pleasant. Add to this that the zealous and conscientious supporters of abstinence theories have engaged accomplished physiologists and eloquent lecturers to plead the arguments in favor of their cause, and lay considerable stress on the physical facts and metaphorical illustrations which, at first glance, and without examination of the other side, might tell for them. To fortify ourselves against these fallacies, into which the best part of our nature might lead, it is not without value to reiterate the fact, that *use is not abuse*, and that there is an essential difference, not in *degree* only, but in *nature*, between temperate enjoyment and excess.

The best line of distinction between the two—the best test for the practical man, whether he is taking in alcohol, a food or a pleasant poison—is to be found in its effects during those hours between meals, during which digestion is going on. If the body during this period is more active, more efficient for the mind's purposes when alcohol is taken than when it is not, we may feel sure that the individual, whether healthy or invalid, is benefitted by it. If, on the other hand, the senses are blunter, or the muscular system is weaker, or the guiding power less steady within four hours after the meal, the probability is, that in all but exceptional cases the alcohol is either not beneficial at all, or is taken in excess. This reference to the moral relations, to the final purpose of the corporeal frame, is similar to that which was made in the distinction between health and disease in a former chapter, and is certainly more generally applicable than any merely physical test. The same rule is applicable to the normal and abnormal state, and though here spoken of invalids, holds equally good for the robust.

A question might naturally occur to a cautious man, willing to know the real merits and demerits of accessory foods in his case, whether, allowing immediate good results, an accumulation of postponed evil may be expected to come on in the end? He may say that truly he feels himself stronger and grows heavier for a week or a month, but does not

some indefinite disease or shortening of life repay him at last with interest?

This is a very common fear with "the million:" a book lately had a considerable sale, writ by an unfortunate man, who traced all the evils to which flesh is subject to the use of salt: to tea has been ascribed all the imaginary degeneracy of the nineteenth century: tobacco, again, has been so "counter-blasted" by royal and other pens, that one might imagine smoking had only to be stopped to free the world of half its miseries. In the case of alcohol, a more insidious *ad hominem* argument is used, and the fears of the individual for his own safety are more pointedly appealed to by the teetotalers; so that we constantly find well educated people, while half ashamed of their irrational bugbear, and not influenced in practice, yet made miserable and deprived of rest by it.

The best answer is the statement which all physiological and medical experience will not fail to prove—viz., that *where the digestive powers of the alimentary canal are made stronger, where the muscular system becomes more powerful, at the same time as the whole body increases in weight, no future harm will result.*

In a volume like the present, there is of course no place to discuss the *moral and political* aspects of total abstinence. A physician's duty is to set forth what is best for the individual body, as is done above, and to dissuade temperate persons from entering into engagements which may shorten their lives and impair their usefulness. Still more is it his duty not to allow fallacious theories to interfere with the health of the individual patients who have entrusted their bodies to his care. But let it be remembered, that not a word has been said against any person or association united for the purpose of avoiding and discouraging *excess*. They have undertaken a noble and a holy work, but all history, revealed or recorded, shows that it is one which ascetism will only retard. It would also be folly to deny the wisdom of many persons imposing private vows of abstinence on themselves, for the sake of health or prudence. But it may be surely questioned whether they have a right to persuade others to undertake the same to their detriment.

In quoting the following passage from Dr. Moleschott, Dr. C., says that the former "goes rather too far:" "Alcohol is a *box for savings*. A man who eats little and drinks moderately of alcohol retains in his tissues and blood more than he who, under corresponding circumstances, eats more without taking beer, wine, or brandy. Clearly then it is hard to rob the laborer, who in the sweat of his brow eats but a slender meal, of a means by which his deficient food is made to last him a longer time."

Without endorsing these *alcoholizing* opinions, it may be proper to allude in this place to an alleged fact recently announced by non-professional travelers upon the continent of Europe, from which it appears that some experienced hotel keepers furnish their boarders with wines and other spirituous drinks at table without charge, upon the ground of strict economy, inasmuch as they find that those who do not drink,

eat much more than those who do, so that "dining and wining" cost less than dining *per se* ! That there may be some truth in this story, is probable from the fact very usually remarked concerning hard drinkers, namely, that they eat little.

Dr. Chambers' summing up concerning tea-drinking has a similar significance: "When the diet is insufficient, tea limits very much the loss of weight thereby entailed. When the diet is sufficient, the body is more likely to gain weight when tea is taken than when not. Tea diminishes very much the loss of substance in the shape of urea. Tea lessens remarkably the quantity of fæces—limits the loss by perspiration, &c." 205-6. Coffee affords a parallelism to tea. Dr. C., adds: "the tea and coffee drinker may have less to eat, and yet lose less weight—wear his body out less, than a water drinker. At a comparatively small expense he may save some of the costly parts of his diet, those nitrogenized solids that entail so much thought, labor, and anxiety to obtain. The loss of carbon indeed goes on much as usual, and a moderate outlay will supply that ; but what an economy it is to spare the quantity consumed of sweet bread, milk, and all the most expensive vands !" 208. O landlords ! O boarders ! be ye mutually comforted for wine, tea, and coffee in abundance will save cash, and exhilarate your souls !

Dr. Chambers does not set his face against American tobacco—not he ! Though King James' doggerel, a counter-blast against tobacco, declareth

"That of all the herbs in any place,  
It is the herb the most opposed to God's grace!"

But Dr. C., asks:—"Is all the tobacco burnt in England at the expense of six million sterling a year pure waste ? Surely the universal propensity of our race to these articles should lead us to conclude that there is a use as well as an abuse." The author is not one of those grumblers who find "*nothing right upon the earth.*" He makes no war against the gratification of the instinctive thirst in fever for iced water and lemonade ; but he gently chides professor Lehmann for deriding Gallic dieticians who prescribe indigestible slops, ptisans, gummy drinks and the like.

"Physiological Medicine" is a possibility, alike reasonable and consolatory. Broussais' adoption of this term—"physiological medicine"—was as happy, as his application of it to his dogma—"gastro-enteritis" and gum-water, was erroneous, his therapeutics and his pathology being too exclusive for the broad domains of these sciences. Rational medicine must be free ; for, as yet, its satisfactory explanations and methods of curation whether by diet or drugs, are often very limited, scarcely rising above probabilities, sometimes falling to mere provisional assumptions.



A rational dissent from some of the principles which Dr. Chambers dignifies with the august title of Rational Medicine, might possibly be supported by incontestable evidence. The universality which Dr. Chambers gives to the appearances of the mouth, and chiefly the tongue in diagnosing the true condition of the stomach and bowels in almost all maladies, is neither warranted by facts of daily occurrence at the bedside nor countenanced by a vast many post-mortem examinations performed in a few minutes after death from intestinal and other maladies. And, although the tongue is almost as deceitful in semeiology as it is in sociology, yet, Dr. Chambers' remarks on that organ are valuable, being suggestive if not demonstrative to the medical practitioner.

In referring to morbid affections of the muscular coat of the alimentary canal, Dr. Chambers asks:—"Is the peristaltic wave ever too strong for its work as well as too weak? That is to say in fact, is diarrhoea, or the too rapid passage of the contents of the alimentary canal, to be referred to excess of action? I confess when I see this action most commonly produced by ulceration, inflammation, and other causes which generally arrest muscular motion, I am loath to suppose that the peristaltic wave is increased in power under such circumstances.\*\*\* All evidence seems against the supposition that the bowels are in a state of tonic contraction." 266. To the universality sought to be given to this view there is good ground for dissent. From the nature of the case, the rationalistic evidence cannot be confirmed by that grand dispeller of doubts, post-mortem examination, because patients suffering from diarrhoea caused by a morbid functional action of the muscular tissue, do not die; at least, they do not die until the mucous coat is implicated by inflammation, though perhaps secondarily. The rationalistic evidence is aided by the method of exclusion. Having excluded all the usual symptoms of diarrhoea excepting that of frequent feculent painless discharges in which neither mucus, nor blood appears, it is reasonable to suppose that the muscular contractions are deranged particularly in the rheumatic diatheses, and the more so as the patient often suffers comparatively little in appetite, strength, and flesh in this variety of diarrhoea. The stools lose neither their feculent character, nor odor, occasionally passing in a state of fermentation, yet free from both choleraic and inflammatory appearances. Finally, the cure is effected chiefly by antispasmodics, or by passive exercise, as sailing, travelling in coaches, steamboats, change of air, &c. This form of diarrhoea is little amenable to diet. Opium by enemata is the most reliable remedy, as it may be managed so as to lessen and even paralyze the morbid contractions of the muscular tissue of the bowel.

The digestive and nutritive actions of the stomach and small intestines though usually little disturbed except by sympathy with the large

intestine, may in some cases, just accordingly to the perturbations in the latter, be greatly deranged together with the whole system.

The morbid muscular derangement mentioned is probably almost always in the large intestine (the cæcum, colon, and rectum,) the grand *dépôt* of the small intestine. Thus fæcation is arrested, the immature fæces instead of being detained until solidified, are hurried onward with an unnatural velocity in the liquid form. Whether this theory be correct or not, it has led to the cure of some obstinate cases that might be enumerated.

Dr. Chambers from a physiological and Germano-experimental standpoint, concludes "that not only the whole of the fluid of the bile, but at least seven-eighths, and perhaps fourteen-fifteenths of the solid matter is again taken up by the absorbing vessels on its road from the liver to the rectum." 152. "That it is *partly* an excretion may be easily conceded, for in a certain sense not only all secretions, solid and fluid, but also all elements of growth are so." 151. He maintains that a full diet, particularly a flesh diet, increases, while a *fatty* diet, contrary to theoretical views, diminishes to an extraordinary degree the quantity of bile. "Pure fat is as bad as starving diet." Mercurial medicines "increase the production of yellow matter in the cells of the liver, and also cause a very great sanguineous congestion of the liver; aloes, oil of turpentine, rhubarb, increase the flow of bile." 142-3.

If these postulates shall be accepted, pathologists will find their nomenclature to be greatly damaged. How many bilious fevers! Bilious attacks! Bilious tongues! What biliousness! Bilious ailments are so common as almost to justify a change in the usual salutation from "how are you? to how is your bile?"

Although Dr. C. allows that pure fat is no better than a starvation diet, he is, nevertheless, no enemy to that tissue, as the following statement shows:

"The great quantity of fat present throughout the body, increasing its efficiency, making more easy its motions, adding to its beauty, and forming a component part of the prime material means of communication between the mind and matter by being a necessary constituent of brain and nerve, shows sufficient cause for its being a complementary food. Its importance is shown by the quantity afforded in milk to the young animal: it is easier digested than other hydro-carbons, which as regards respiration may be classed with it, and therefore is preferable for that period of existence when a full allowance of such food is desirable. In the food eaten in later life is also largely present, and is instinctively viewed by all nations as an object to be sought for. It is associated in all languages with ideas of luxury from the earliest ages. The "butter and honey" of the prophet, used as a phrase for royal food, and the reference in almost every second page in the Bible to oil as a

source of riches (though it could have been no *rarity* in a country peculiarly described as a "land of oil olive,") are sufficient to show its estimation among the ancient Orientals ; while in the present day the Hindoo sepoy, when he devours his gallon of rice at a meal, will spend all the pice he can get on the clarified butter of the country, and "as good as ghee" is his expression of unqualified praise. It was an error in Dr. Liebig to state that oily foods are an object of disgust to nations of warm climates ; all races of man require them and seek after them : and the habits of the Esquimaux, so often quoted, probably depend on the abundant supply of the article which the sea places at his disposal, coupled with a scantiness of other provisions, more than on the instinct of taking "respiratory" aliment. Throughout the globe there is a craving for fat in some form, varying according to the climate, because experience shows one form more than another to be subject to decomposition under particular circumstances ; varying also according to climate as the cause of its production in one or another shape."

Dr. Chambers' therapy which is very active for the present fastidious and sceptical generation, includes blood-letting, powerful purgatives, and the like. On the other hand, he is liberal in diet, tonics, alcoholic drinks, &c., requiring, however, due discrimination in all cases.

Alas ! for the stability of theory ! Two generations have not passed since cold water was inhibited in ardent fevers ! Later still, gummed, acidulated, iced drinks were cautiously allowed, but a chicken's wing or a few teaspoonfuls of chicken water were sometimes deemed sufficient to cause relapses and reproduce inflammations ! Now the medical chemists, physiologists, rationalists and dieticians all direct a sustaining diet and stimulating drinks soon after, and indeed, often before the subsidence of inflammatory action. The present tendency of therapeutics, including diet, is not due, however, to theoretical biases, but to a vast amount of experimental research, good or bad, in physiology, chemistry, &c., such as the world never before witnessed, and whatever errors of interpretation and deduction may exist, there is reason to hope will be discovered and corrected to a great extent, should the same patient spirit of investigation continue throughout the nineteenth century. The doctrines of metamorphosis—of repair and waste—of the physiology and chemistry of "digestion and its derangements," are in many respects new, and will doubtlessly receive a more complete experimental elucidation at no distant day.

After all the real or supposed discoveries by chemists, physiologists, and dieticians concerning digestion, the solubility, division, dilution, coagulability, absorbability, endosmosis, and adaption of diet to the waste and repair of the organism in health and disease, very little practical advantage is, at present, attainable in individual cases, when the practitioner draws near the bed-side of the sick or convalescent, and under-



takes upon chemical principles to prescribe the kind and quantity of diet and drinks, whether, nitrogenous, hydro-carbonaceous, or albuminous. In order to be theoretically correct, he should not only be able to prescribe the kind, but the quantity of alimentary matter, so as to supply the special waste of any element, as albumen, water, &c., caused by a disease, always foreseeing how this matter will ultimately behave in the economy, the new combinations it will make, and their resultant adaptations to existing wants and metamorphoses of the organism.

The therapist in the sick-room, if not in the study, will find himself alike embarrassed in prescribing diet and drugs upon a purely scientific platform. The practical advances of science are not always readily perceived, and should not be overrated. To use the last words of La Place, "what is known is little—what is not known is immense."—EDITOR.

REV. II.—*A Treatise on Medical Jurisprudence*; by FRANCIS WHARTON, "Author of a Treatise on American Criminal Law," "Precedents of Indictments," "American Law of Homicide," etc., and MORETON STILLE, M. D., Lecturer, &c. &c., Pp. 815. 8vo. Philadelphia: Kay & Brother, 1855.

2d.—*The Case of Luigi Buranelli medico-legally considered*; by FORBES WINSLOW, M. D., D. C. L., late President of the Medical Society of London, etc.. London: John Churchill, 1855.

3d.—*The Medical evidence, and an Abstract of the general evidence adduced on the Trial of William Palmer, at the Central Criminal Court, for the alleged wilful murder by poison of John Parsons Cook*. London Lancet, July 1856. Am. edit. Stringer & Townsend, New York.

In that admirable classic, Blackstone's Commentaries, which physicians should read both for the purity and beauty of its style and for the vast amount of its scientific information upon the fundamental principles of the law and ethics, it is said by the learned author that, "For the gentlemen of the Faculty of Physic, I must frankly own I see no special reason why they in particular should apply themselves to the study of the law; unless in common with other gentlemen, and to complete the character of general and extensive knowledge; a character which their profession, beyond others, has remarkably deserved. They will

give me leave, however, to suggest, and that not ludicrously, that it might frequently be of use to families upon sudden emergencies if the physician were acquainted with the doctrine of last wills and testaments, at least so far as relates to the formal part of their execution.”—(*Com.* vol. I.)

The vast progress of the medical sciences since William Blackstone clothed the rugged form of the law with the blandishments of his eloquence, has created medical jurisprudence and has made the presence of the physician in courts, particularly criminal courts of law very often indispensable, and has also rendered it useful not to say necessary for the lawyer to study several branches of the medical sciences, in order to be thoroughly competent to avail himself of their aid in the examination of medical and other witnesses, in order to defend the innocent, and convict the guilty, and effectuate the finalities of justice and good government.

Problems constantly present themselves for solution in cases wherein other evidence is weak, wanting, or false, as in poisoning, rape, wounds, some forms of murder, and insanity, &c.

Physiology and pathology, normal and pathological anatomy, surgery and chemistry, are all powerful elements which the learned lawyer may sometimes legitimately wield in courts of criminal jurisprudence, which even Blackstone could not now dispense with, were he to re-visit the bench or bar.

It may be expedient for a physician “to know the doctrine of last wills and testaments,” but it is more necessary for the lawyer to know the principles of the medical and the auxiliary sciences illustrative of *Medical Jurisprudence*.

Mr. Wharton is a voluminous forensic author, particularly in the department relating to criminal law. Whence it may be presumed that, this his most recent work, will be found imbued with a maturity and expansion of thought—a luminosity of generalization, to which his experience as a thinker, a writer, and as a practitioner, are flattering preludes, satisfactory antecedents. Nevertheless, the line of research here followed is not only difficult in itself, but has been pre-occupied by gigantic minds both in the legal and medical professions.

This *Treatise on Medical Jurisprudence* is the joint-production of Mr. Wharton and of the late Dr. M. Stillé. The important part assigned to Dr. Stillé was finished, when, almost simultaneously, he descended to the tomb, though still young. He ceased at once to work and live.—Brief but brilliant career! Mr. Wharton’s allusions to his life and death are at once full of pathos, grief and love.

The heroes of science, equally with the heroes of war, deserve to be

held in grateful remembrance, and should equally partake in the benedictions of the poet.

“How sleep the brave who sink to rest,  
With all their country’s wishes blest.”

From the earliest times to the present, humanity has, in the midst of bereavement from death, drawn perennial consolation from the fair fame of the departed ; this in the Ossianic school is “the joy of grief.”—Thus, the aged Crothar consoled himself for the loss of his son in battle, by the reflection that he died renowned. “He came and spoke to Ossian ;—my son has not fallen without his fame. Happy are they who die in youth, when their renown is heard !” Ossian who had slain Uthal in battle laments over his dead body, and rejoices in his fame : “It was then I saw him in his beauty, and the tear being in my eye. ‘Thou art fallen young tree, I said, with all thy beauty around thee. Thou art fallen on thy plains, and the field is bare. The winds come from the desert ! There is no sound in thy leaves ! Thou art lovely in death !’

Mr. Wharton seems to have written the preface of his book, with the bier of his late companion and co-laborer before his eyes. “In the first week of July, 1855,” says he, “Dr. Stillé sent from his office the last of the manuscript of that portion of the following pages which fell under his charge and almost immediately afterwards was stricken down by a disease which found him with strength impaired by the exhausting studies of the preceding winter. On August 20, 1855, he died at Saratoga, almost at the moment when the press was issuing the last sheets of a work which contains so much worthy of being erected as a monument in which his professional brethren will recognize the impress of his high intellectual gifts and culture.”

Of this book, their joint production, Mr. Wharton says : “The work which these lines now close was one which brought both of those engaged in it into the most intimate and affectionate personal intercourse for many months ; and the one who survives can now scarcely look upon the preparation of a single page without having cause to remember and record those high mental qualities and culture, whose value in the present case was only increased by the gentleness and the fine sense of personal honor with which they were associated.” \* \* \* \*

“Dr. Stillé’s character was the highest which human standards can afford,—that of a husband, son, and father always true, tender and just.”

Wharton and Stillé had formed a literary friendship, and moral conjoined to literary excellence is the purest stream which flows through the troubled realms of humanity—

“Though deep, yet clear, though gentle, yet not dull.”

It is not intended to enter into a formal examination of this work on **Forensic Medicine**. It is an elementary one. It may be more useful



to review one of its fundamental principles in relation to the superiority, paramount value, and absolute conclusiveness of medical testimony, particularly in reference to insanity, &c., involving questions of supreme interest to the well-being of society, and justifying the devotion of a considerable space in this Journal to their elucidation.

Mr. Wharton in dealing with the subject of mental unsoundness, avoids dogmatism on the one hand, and a high authoritative appreciation on the other. Exuberant citations and the opinions of others to a great extent take the place of his own desiderated deductions. If the student can from his enumeration make out for himself a positive philosophy, well and good, but Mr. Wharton will not wholly and absolutely commit himself to theories of upon which so many great intellects have disagreed, and in relation to which there is danger of miscarrying, even on the part of "a Philadelphia lawyer;" at least, this is the impression derived from a first view; but on taking a more minute survey, it will appear that Mr. Wharton has a theory, and not the most tenable one either. Mr. Wharton gives a summary of the theories of mental unsoundness (§78-85) apparently assenting to the one which makes the soul, not the body, the seat of insanity. He says: "The most eminent European authorities now tend to the conclusion that mental unsoundness is a disease of the soul itself, but has its seat, not in the soul's intellectual but in its grosser spheres." §83. He further says, that the soul acts directly on the body, either with or without the usual muscular or nervous action." §85.

This ghostly theory of mental unsoundness which repudiates the body as the original seat of the disease, offers no demonstrative evidence—no example showing primary morbid alterations in the soul itself. Immaterial morbid alterations, alterations in the abstract are not even conceivable. On the other hand, anatomical alterations in the material organism often explain dementia, insanity, delirium, &c. Ghostly pathology explanatory of mental and moral insanity constitutes sterile hypotheses, little worthy of the acceptance of an experimental philosopher. This hypothesis is scarcely consistent with another which Mr. Wharton insists on, namely, that physicians, whose studies are all material, are the only certain, if not infallible judges of insanity, which the sequel will more fully show. Mr. Wharton says (and repeats the assertion) that, "whether a man is really, or only apparently deranged, is a question which cannot be decided with the certainty belonging to science except by a physician." §91. The validity of this opinion will be examined hereafter.

The fundamental type or criterion by which a witness judges of insanity is a combination of the objective and the subjective. The sub-

jective ideas of understanding, motivity, volition, purpose, reason, sequence, moral and physical means and ends existing in the witnesses' own mind must guide him upon the principles of comparison, analogy, &c., in his judgments concerning the sane, or insane subjective condition of another, as indicated by his observed conduct. A miser who throws all his money into the sea may be sane ; nevertheless, conduct so contrary to his known character affords a contrary presumption. A man whose subjectivity or ideas and impressions are erroneous and false, while he regards them as having objective reality, truth, and validity without the ability to detect and correct by comparison, and analysis, these deranged, incompatible and false relations existing between *the-within* and *the-without*, the subjective and the objective, is insane. These false subjective all-powerful associations of ideas, arise progress, and decline, or give place to a different chain which may bind him permanently in lunacy.

The inability of the will to regulate its volitions and other mental operations in a coherent and rational manner, during sleep, is a subjective type of insanity known to all, though it is neither definable nor comprehensible to one who never dreamed. In dreaming, far more than in somnambulism, the understanding, is interrupted and aberrant, the association of ideas incongruous, the will dethroned, the passions eccentric, and the body often greatly disturbed—its normal functions deranged.

In both dreaming and insanity the predominant ideas appear subjectively to be realities, though in both it seems probable that the parties occasionally have doubts whether they are dreaming ? Whether they are insane ? Sometimes in dreaming this is certainly the case ; the party who murders or is murdered in his sleep consoles himself while still sleeping with the thought that all is but a dream.

Dr. Abercrombie who affirms that, "of the cause of insanity we know nothing," says further—"we may trace its connection with concomitant circumstances in the bodily functions and certain effects which result from it." (Intellect. Powers.) He gives also the following generalizations concerning SPECTRAL ILLUSIONS, which evidently approximate insanity :—"1st. False perceptions or impressions made upon the senses only, in which the mind does not participate.

2d. Real dreams, though the person was not at the time sensible of having slept, nor, consequently of having dreamed. 3d. Intense mental conceptions so strongly impressed on the mind as for the moment to be believed to have a real existence. This takes place when along with mental emotion, the individual is placed in circumstances in which external impressions are slight as solitude, faint light, and quiescence of body. It is a state closely bordering on dreaming, though the vision occurs while the person is in the waking state. 4th. Erroneous impressions connected with bodily disease, generally in the brain : analogous to dreaming. 5th.

Misconception ; the imagination working up into a spectral illusion something trifling, &c."—(*Ib.*)

The physicians, however, in many cases of mental unsoundness stand on the same platform with other interpreters of sanity and insanity, "judging the tree by its fruit," having at the same time due regard to the well established, yet normal dissimilarities and eccentricities of the human mind and its phenomenal history in different individuals, and their consistency with these known natural and habitual individual characteristics.

Mental unsoundness is of an almost indefinite extent and degree, ranging from idiocy, imbecility, weakness, eccentricity, &c., to partial, or total permanent insanity, furious delirium, and ungovernable rage, forming a department of study the elucidation of which requires a discriminating experience.

In tracing the relations between insanity and materialistic phenomena, as organic lesions, symptoms, &c., the physician's testimony is paramount and must ever preponderate over that of others less competent to judge of these morbid conditions. But in many cases of mental unsoundness medical diagnosis fails in establishing by materialistic criteria, organic lesions ; and the most careful examinations after death have often revealed little or nothing truly characteristic of mental disease. But from what is already known of the pathological anatomy of insanity, and from broad analogies of this hopeful method of investigation, it is probable that mental diseases originate in changes in the organism, the detection of which have as yet escaped the existing means of research.

Mr. Wharton maintains, however, (§86 to 94) that medical experts are necessary for the purpose of detecting mental unsoundness. "If," says he, "there has been any difficulty in the reception of the result of medical experience, when insanity is at issue, it has arisen from that occasional conflict of opinion among medical witnesses which the highest professional authority have lately so entirely united in deploring." This statement so flattering to the sagacity of the Medical Faculty, is put, by far, too strongly. Sad experience has proven that the medical profession suffers more detriment in the public estimation when brought into criminal courts than upon any other theatre of actual life. Eager to get positive testimony even where none could be reasonably expected from a physician, either from the inherent difficulties of the case or the witnesses' lack of complete experimental knowledge in the premises, lawyers, courts, and juries propound innumerable, insidious questions, getting in return answers which are but the reflections of other theorists, seldom verified by an enlarged experience or personal observation. Hence, almost every great criminal trial in the land, is, so far as medical testi-



mony is concerned, stamped with erroneous, false, or contradictory statements, altogether creditable neither to moral nor medical science. Be the cause what it may, the fact alluded to cannot be denied.

Those questions put to the medical witness, the truth of which he has not verified in a sufficient number of instances, should be answered thus—" *I do not know, so help me God !*"

"We must take the testimony of each man," says the Rev. Dr. Chalmers, "to the worth of that which he does know, and reject the testimony of each to the comparative worthlessness of that which he does not know."

M. Wharton maintains that in navigation, building, engineering, natural history, surgical injuries, &c., the opinion of experts "is part of the law of the case,"—whence he argues the validity of medical testimony as to whether "the party was insane,"—"whether if a certain state of facts be true the inference of insanity would result therefrom." (§94.)

Now this theory may seem logical to courts, juries, and lawyers, but it is fallacious as a criterion applicable to mental diseases in which equally obvious physical changes cannot be detected. A builder may safely swear that a house cannot be built from above downward—a navigator that latitude is ascertained by certain astronomical methods—an engineer that caloric expands aqueous vapor—a naturalist that an alligator differs physically from a humming-bird—a surgeon that evisceration will kill a man—all of which testimony is derived, not from immaterial or unknown changes, but from physics or uniform experience, being as indisputable as the law of gravitation. But it is very different in regard to mere opinions in speculative medicine, in religion, law, politics, thoughts, motives, volitions, soundness of mind, &c., in which no physical phenomena or invariable antecedents can be ascertained, fixed, and known. All the world agree that the sun appears to be round, not square. No one, not even a doctor, is able to know the immaterial or the subjective condition of another independent of objective conditions or acts, concerning which, however, reasoners may doubt or differ according to the extent of their knowledge, or honesty. Doubt and acquittal are synonymous in a criminal case.

Medical witnesses sometimes find themselves unwittingly on both sides, for and against the prisoner, contradicting themselves ; or if they hold out with consistency and unity to the end, they will usually be doomed to hear their sworn testimony invalidated—quite demolished, by their medical brethren who shall testify for the adverse party.

Physic may cover itself with glory in the sick room, in the battlefield, in the field of positive science, but rarely in criminal courts as

matters are now managed or mismanaged. The physician may diagnose a positive disease, wound or fracture—may swear that the accused is sick, has epilepsy, delirium tremens, inflammation of the brain, fever, or some other positive malady, which is or is not usually accompanied with insanity, as he knows from an all-sufficient medical experience and observation, but let him beware, and leave to others the onus of spiritualistic oaths, psychological medicine or theory, in which materialistic symptoms cannot be diagnosed, as in the so-called moral insanity, passionnal aberration, sentimental phrensy, spiritual pathology, lesions of the soul, clairvoyant therapeutics, and ghostly speculations. He may swear as to the existence of physical disease and its usual effects on the mind, but not to psychological hypotheses and subjective conditions which present no objective validity. He should not swear to even his own theory in such cases.

It is remarkable that all the examples adduced by Mr. Wharton to prove the supreme superiority of the medical witnesses, relate to topics upon which non professional men of equal general intelligence and experience in the affairs of the world, are just as competent witnesses. Indeed there is a class of medical men who have strong theoretical biases which might sway them more than others of equal practical acquaintance with human motives, passions, and conduct.

Mr. Wharton's concessions and preferences in favor of the Medical Faculty must be admitted as good in so far as insanity can be diagnosed as a bodily disease. Certainly, the physician would be the best possible witness as to unsoundness of mind originating in malformation, idiopathic, and traumatic lesions of the brain, fevers, inflammations, &c., as already mentioned.

But Mr. Wharton, who requires of the doctor a good deal more, would have him to decide upon insanity generally,—or as Hood would say, the doctor must decide the color of a cat in a bag. Mr. Wharton says: "Even though the witness has not had opportunity of personal inspection, he may be asked for his opinion on an assumed state of facts or upon the evidence given on trial. In England this position has been disputed. In America the rule is now settled. The opinion of medical men as to whether particular symptoms, supposing them to exist, constitute insanity, is part of the law of the case." §94. The danger and absurdity of such suppositions or "assumed state of facts" as "a rule of evidence now settled in America," can be fully illustrated by turning to section 849 of this same work, concerning the case of Gage which occurred in 1850, the authenticity of which is beyond all dispute: "Phineas P. Gage, of (Massachusetts) was occupied in charging with powder a hole drilled in the rock for the purpose of blasting. His

assistant having neglected to cover the powder, as is usual, with sand, Mr. Gage who was not aware of the omission, dropped the head of the iron upon the charge, to consolidate or 'tamp it in.' The iron struck fire upon the rock, and the charge exploded. The bar of iron was projected directly upwards in the line of its axis, passing directly through his head and high into the air. It was picked up at some distance smeared with brains and blood. The patient has quite recovered in his faculties of body and mind. The weight of the iron bar was  $13\frac{1}{4}$  lbs., its length three feet seven inches, its diameter  $1\frac{1}{4}$  inch. From the tract taken by the bar, a considerable portion of the brain must have been carried away. While a portion of the lateral substance may have remained intact, the whole central part of the left anterior lobe of the front of the sphenoidal or middle lobe must have been lacerated or destroyed. This loss of substance would also lay open the anterior extremity of the left lateral ventricle, and the iron in emerging from above, must have largely impinged upon the right cerebral lobe, lacerating the falx and the longitudinal sinus.

"Immediately after the injury, the patient was slightly convulsed, but spoke in a few minutes. He was carried to an ox cart which stood at a short distance, and rode in it, sitting erect full three-quarters of a mile. He got out of the cart himself, and, with a little assistance, walked up a long flight of stairs into the hall, where he was dressed. He retained his senses and memory perfectly, and gave an intelligent and connected account of the accident." (See Am. Jour. Med. Sciences, July, 1850.)

Mr. Gage visited Boston some years afterward—was examined before the Medical Society—and, as far as is known, he is now sound in body and mind. Now here is a case of positive lesion, not an immaterial or psychological one—a bar passes from the base to the summit of the skull, emerging from a hole three or four inches in circumference—a case in which doctors would be the most competent witnesses; a case the best adapted for getting their "opinion on an assumed state of facts," as Mr. Wharton allows; perhaps not one doctor in a thousand would hesitate to swear that such a case must be fatal. And yet such an oath would have been altogether false. Were Gage hereafter to commit wilful murder, would the psychological pathologist be warranted in swearing that "such a state of facts" would, at the end of six years eventuate in homicide?

Virtually, then if not intentionally, it seems from the foregoing statements, that law-makers, law-writers, judges, lawyers and juries, combine, nay conspire together, not only to release themselves from onerous responsibilities, but to put the *onus probandi*, upon doctors in



the matter of insanity, even in cases of the greatest obscurity in no wise connected with any definite form of bodily disease. Verily, the legal and judicial professions are not guiltless, when they exact and receive under oath, opinions as valid, how contradictory, or conjectural soever they may be. As physicians must study half a dozen of sciences more than lawyers, the latter ought to be better qualified (having more leisure) to observe and study insanity, seeing that it is, for the most part, according to the law books, a psychological study; at least, physicians are no more required than lawyers to study psychology and solve its problems on oath. Virtual perjury unwittingly committed and sinless perjury in medical testimony, is not wholly attributable to the cunning devices of the law, but to a besetting weakness as old as medicine, namely, a pretended knowledge of causes (*ætiology*); whereas, true philosophy never has been able to appreciate, even in the physical world, a single cause as being necessarily adapted in its nature, properties and essential relations, to produce a definite effect.

The cause of gravitation, the best explained and most universal law of nature, is wholly unknown. It is not the necessary known connection between cause and effect, which philosophy deals with, but the laws of the phenomena, their order of antecedence, succession, and their universality, &c. Nevertheless, the words cause, explanation, &c., are essential in writing and conversation, though in the strict, philosophical sense they are not to be understood as implying perceived or appreciable connections and final adaptations between any two or more events whatever.

The able Dr. Renouard, of Paris, in his recent history of Medicine,\* criticises the ancient expounders in *ætiology* thus: "These efforts to explain everything, often throws the best minds into strange ramblings. We shall see many, and even celebrated examples of it. The philosophers and physicians of antiquity would have thought themselves without reputation, if they announced a single phenomenon without giving some interpretation of it. Rather than fail in this, they made use of the most ridiculous explanation." Let the present learn of the past.

The jurisprudence of poisoning is a matter in which the court has a right to look to the medical more than any other profession for reliable information. But among well educated physicians few have the leisure to study, and fewer still the necessary knowledge to practise chemistry, organic and inorganic, so as to make analyses perfectly reliable and beyond the possibility of error, as to the presence or absence of poisons in the animal economy. The most eminent of modern toxicologists, the late M. Orfila, of Paris, who devoted his long life to the medical juris-

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\*Translated by Prof. Comegys, of Cincinnati, 1856. Pp. 719. 8vo.

prudence of poisons, mineral, vegetable and animal, himself committed important errors, which, however, his vast subsequent experience enabled him to rectify. A physician destitute of an expensive laboratory, unpractised in analyses, and without frequent opportunities of examining persons supposed to have been poisoned, may say, without criminal ignorance that his experimental investigations do not enable him to pronounce definitely upon every question that may be put to him in this behalf.

A further examination of Mr. Wharton's able work must be postponed, the limits of the Journal being too small to do him justice.

The second work named at the head of this article, concerning Buranelli, will serve to illustrate the postulates already indicated as it regards the difficulty, uncertainty, and supposed paramount value of medical testimony in an interesting case in which the common sense view of the testimony was, it may be presumed, satisfactory to the jury, court, and government, though directly contradicted by a vast array of the most celebrated medical men in the realms of Great Britain. The importance of this trial, both as it relates to the well-being of society, and the medical faculty will justify an examination more extended than is usually allowed in this Journal.

Dr. Winslow opens his narrative of Buranelli's case with the following eloquent exordium showing clearly enough the positiveness of his own opinion and that of others in a case wherein testimony strictly medical could have, even upon his own showing, almost no application, as will more fully appear. For, with the exception of verifying the prisoner's exaggerations about the nature and extent of his *fistula in ano*, medical witnesses were unnecessary, and the more so, because for the most part, those who were in favor of the prisoner's insanity appear to have made little or no personal examination :

"The case of Luigi Buranelli has excited, among all classes of the community, an intensity of interest almost unprecedented in the records of British criminal jurisprudence. That this miserable man was a lunatic when he committed the crime for which he suffered an ignominious death upon the gallows; that his life was cruelly sacrificed in blind submission to the speculative medical and mystical metaphysical opinions of those who, in the performance, of what they no doubt conceived to be a painful professional duty, swore to his sanity and responsibility, are points easily susceptible of conclusive and triumphant demonstration. Were we to defer to the dictates of our own personal feelings, the curtain should drop at once and forever upon this terrible drama—this dreadful legal tragedy ; but the sacred call of HUMANITY, of JUSTICE, of DUTY, imperatively and irresistibly forces us to bring this subject, in all its revolting details, before our readers, and renders it necessary that we should accurately analyse and rigidly criticise the general and scientific

evidence adduced during the trial of this unhappy criminal. It is a sad, sickening, and repulsive duty that we have imposed upon ourselves : but we cannot conscientiously shrink from its performance.

"The execution of Buranelli will, we fear, be a foul stain and a 'damned spot' upon the humanity and intelligence of the nineteenth century, and will, we apprehend, do an incalculable amount of injury to the advancement of the science of medico-legal testimony in cases of alleged lunacy, and seriously retard the progress of British Medical Psychology. The execution of Buranelli, in direct opposition to the evidence adduced in favour of his insanity, and in defiance of the strong protest subsequently made against his death, will throw judicial psychology back in this country for at least half a century. Enlightened medical jurists had flattered themselves that great progress had in recent times been made in the dissemination of just and humane principles in reference to criminal jurisprudence. Able judges and distinguished advocates have certainly exhibited of late years a disposition to entertain views in regard to criminal insanity, more in unison with the deductions of modern science ; but this event throws a melancholy blight over these bright hopes and sanguine expectations. We have, since the establishment of the *Psychological Journal*, in 1848, striven to the utmost of our humble ability to place the great subject of insanity associated with crime on a philosophic basis, and have endeavoured to dissipate the many fallacies that unhappily prevail in connection with the different branches of psychological medicine. We have no desire to make an ostentatious display of these labours ; it has been our pride and pleasure to be engaged in such a work of LOVE and MERCY, and have ever esteemed it a noble privilege to stand forward as advocates in so holy and righteous a cause. We have never, in the performance of our editorial duties, allowed an opportunity to escape without placing before our readers, clearly and distinctly, what in our judgment we conceived to be the right, humane, and scientific view of insanity in all its relations, and we have been particularly anxious to impress upon the minds of our readers the principles that should not only guide the judicial tribunals of the country in adjudicating in cases of alleged criminal insanity, but direct the medical witness when called upon to give evidence in these important cases. We cannot therefore contemplate the late fearful catastrophe otherwise than with feelings of deep and fearful emotion.

"The trial and execution of Buranelli establishes that we had somewhat miscalculated the amount of enlightened progress made of late in judicial psychology, for we not only find a Judge, distinguished for his learning, natural sagacity, and eminent acquirements, disposed to repudiate the plea of insanity, when based upon what able, experienced, and reflecting men conceive to be conclusive evidence, but we, alas ! see medical jurists of character and position stepping boldly forward to support, by the weight of their testimony and the authority of their names, one of the monstrously iniquitous verdicts of modern times ! This we conceive to be the unhappy feature, the salient point of the case, as far as the science of medico-legal testimony and the state of psychological medicine are concerned. To be routed by a flank movement ; to have our redoubts seized ; our own guns pointed at us ; to be



exposed to a murderous fire from those upon whom we fully calculated for support at the hour of danger ; to be deserted by some of our own allies at a critical moment, are matters deeply to be regretted, and sadly to be deplored ! Much mischief must result from this retrograde movement."

A reviewer wishing to deal fairly with the reader, the author, the facts, and the conflicting opinions involved in this case, must encounter unusual difficulties and the more so as some medical critics have declared unhesitatingly that the execution of Buranelli was judicial murder, "a damned spot" upon the humanity and intelligence of the nineteenth century."

Amid these conflicting opinions the recorded testimony, much of which is entirely irrelevant and need not be repeated in this Journal, *in extenso*, affords internal evidence of far higher value than the contradictory opinions advanced by medical men. This internal evidence, be it remembered is compiled and published too, by Dr. Winslow, who is one of the highest authorities in Psychological Medicine in Insular Europe, and who, while he furnished unquestionable proof of the guilt, avows the entire innocence of Buranelli, having taken the lead in favor of the latter living and dead.

Thus Dr. Winslow's reproduction of the testimony, which is doubtlessly fairly given, though mingled with his positive opinions in favor of the prisoner's insanity, enables the reader to judge for himself. It is believed that few can carefully read this testimony without discerning Dr. Winslow's merciful biases in favor of the Italian, also the preponderating evidence against the validity of his opinions, though fortified by *ex parte* certificates upon what Mr. Wharton calls "an assumed state of facts"—which, it seems, is a paramount rule in America, though dubious elsewhere !

Buranelli's antecedents as tailor, Papal soldier, as valet to Mr. Stewart (Scottish monk assassinated in Italy), as servant in England, where he lost two young wives, as paramour of Mrs. Williamson at Lambert's, as an invalid suffering from *fistula in ano* afford little if any presumption either in word or act indicative of probable insanity. There is much evidence showing that he was embarrassed in his circumstances, capricious, dissatisfied, melancholy and despairing in temper and disposition, eccentric in character, and like most others *hypochondriacs* he magnified his ailments. He was very extravagant in his censure against Doctor Baller for the manner in which the latter treated the fistula. These grumblers are not rare among the sick.

Now all of these eccentricities, absurdities and extravagancies so far from establishing beyond doubt, his insanity would seem to have been the natural results proper to his melancholy disposition, aggravated by

domestic sorrow, overwhelmed "by a sea of troubles." Hence he had long contemplated but deferred suicide. His disreputable relations to Lambert's family—his sudden, unexpected and ignominious expulsion from the house—the den of his deceitful mistress—the false charge by the Lamberts that his paramour was pregnant by him—the scorn of the latter, for whom as he was told, another and younger lover had been already provided—her subsequent refusal to answer B.'s love-letters after he had been sometime sent destitute, a wanderer in the streets—all combined, if every day's experience can be relied on, to produce a concentrated anger, revenge, and desperation, which, however, Dr. Winslow ignores altogether.

This new and all powerful combination of circumstances gave a new impetus to the preëxisting, yet hitherto vacillating purpose of suicide, which he now determined to preface by gratifying his ill-concealed passion of revenge, by shedding the blood of Lambert and his pretended wife, both of whom he shot—the former fatally—whereupon he shot himself, though not mortally. Now this is precisely the line of conduct pursued by many desperate murderers of late. They take revenge and cheat the gallows! Wicked actions, but good reasoning!

Buranelli's confessions, letters, and statements in regard to the murder and the causes which led to it, and his state of mind previously not only show the utmost intensity of wounded pride and mortification and a feeling of personal injury calculated to produce a corresponding hatred to the Lamberts, the authors of his troubles, but they all also satisfactorily show that he was not insane. Mr. Wharton says—"a man of unsound mind who commits a deed of blood repels with indignation every intimation of his insanity." §113.

"Real lunatics," says Prof. Beck, "are desirous of being deemed free from the malady, and often assiduously endeavor to conceal from observation those lapses of thought, memory and expression, which are tending to betray them". i. 556.

Now it is astonishing that Dr. Winslow, so justly distinguished as a medical psychologist should offer Buranelli's statements which follow as evidence of his insanity; for B., takes care to dwell on his unsoundness of mind, maintaining that he was impelled to act under irresistible forces. "Ah!" says this cunning Italian, "I who am offended, who was forced on to love, for which I am now suffering, and to be insulted for it, abandoned by my sweetheart! I lost my reason, and became a madman. O my brains! I lost myself. I am a dying desperate man! The Lamberts have made me an assassin."

"The cause of my desperation is the Lamberts. When I left the hospital I wished to return into the country, the Lamberts kept me in

London, and with false flattery wrote to my club, giving notice that I and Madame Williamson had become attached to each other. In conclusion, a flame was lighted in our hearts which hurried us onward to an impropriety, though Madame Williamson was both an experienced and capricious woman. In that moment of love our reason deserted us, and she swore to be true to me many more times than if I was her husband, and I, for my part, the same. Our love was mutual from the first, and cost the honour of Madame Williamson: she, being alarmed at her situation, discovered all to the Lamberts, who immediately began to meddle in the business, and Mrs. Lambert discovered to Mrs. Williamson a purpose of her own. As the state of my health would not allow me to go out of England, I remained in London, and my affection for Madame Williamson increased. At this time I found that M. Kotozd and M. Yambelli had become through the Lamberts equally attached to Madame Williamson. When the Lamberts found that they wished to take her out of England, they attempted directly to cause a separation between them. The Lamberts also prevented the husband of Madame Williamson coming back to her: and with regard to myself Madame Williamson confessed to me that they always spoke disparagingly of me, and attempted by every means to cause the greatest disagreement between us: and they succeeded to the extent that Madame Williamson told me she wanted to love me no more. She also told me that Madame Lambert had promised to give her a sweetheart,—a Sardinian young man, who was to be lodged in the house. When Mr. Lambert did know of my accident with Madame Williamson, he came to me, and acted as if I had been a thief and an assassin, expelled me from the house, and having no regard to my state of health.

"I was in Middlesex Hospital some time ago, and being a friend of the Lamberts; they wished me to leave, and come and live at their house, which I did; while there, I became acquainted with a person named Jane Williamson, and in consequence of some difference with her, Mr. and Mrs. Lambert wished me to leave their house, which I did; Mr. Lambert ascertained that Mrs. Williamson was with child by me; he threatened to strike me, and I left the house; I then became desperate from that time; that was last Thursday week; this morning I went to the house, No. 5, Foley place; when the door was opened to me by the servant, I forced my way into the bed-room, placed the pistol behind Mr. Lambert's head, and shot him; I then shot Mrs. Lambert; I ran up stairs, where I reloaded the pistol and shot myself, and I hope I shall soon die."

His paramour testified on the trial that Buranelli and herself had been "intimate as man and wife," and that after his expulsion from the house she did not see him until after he was shot. Although she had received two letters from him, she did not answer them. Immediately after the murder of Lambert she having heard the noise and seeing Buranelli, asked him—"where is Mr. Lambert?" B. said, "dead," and thought he added "that he was the assassin." He then went into the adjoining room—I heard the window thrown up, and I ran across my room, and looked out of the window, and I immediately heard the dis-



charge of fire-arms—I did not go into the room—the policeman came up and said, ‘open the door;’ when I opened my door, I had a view of the room into which Buranelli had gone—I then saw him lying on the floor, and bleeding from a wound in his face ”

The respects which he sometimes expressed for the Lamberts were doubtlessly but arrant deceit, the more effectually to conceal his murderous intentions; or to gain his great object, the cherished hope of renewing his former intimacy with his “sweetheart.”

Dr. Winslow quotes at length Buranelli’s account of the murder, and of his conduct just before, as “strictly accurate!” This account by himself, of his immediate mental antecedents holds out the idea of insanity very ingeniously for a sane man not wishing to die on the gibbet: “I said, I hurt in my head and my heart heavy. Next day I feel so queer. My head is so bad. I kill myself. Make me sacrifice. I complained of my head, and said I did not know what I should do. He said, ‘Mind what you do.’ I said ‘I am sorry what Mr. Lambert has done with me. It troubles my mind all the day.’ —He said, ‘my wife says you have something on your brain.’” In fact this whole account is a good example of feigned insanity.

Dr. Winslow attaches great importance to Buranelli’s censure of Dr. Baller for his bad method of curing the fistula; in fact, this appears to be the fundamental point of departure for Dr. Winslow’s logic. If such evidence be valid in proving insanity, almost every physician will have a large class of clients who are insane, and unable to distinguish right from wrong. It is very common among patients to ascribe many chronic ailments, aches, constitutional defects, and premature old age to some mismanagement or improper medicines which their physicians had administered to them, perhaps, in childhood. The Italian servant was mistaken quite as much as the negroes whose belief in charms, witchcraft, and conjuring cannot be removed—must be tampered with, in order to succeed with rational treatment.

Nor is Buranelli’s hyperboles about his fistula and the *serum*, &c discharged from it, so as to inundate the bed, as the hypochondriac affirmed, a whit more extravagant than many stories verbal and written concerning manners, customs, hunting, steamboating, &c., still less are they equal in absurdity to homœopathy, hydropathy, Thompsonianism, spiritual rapping,\* clairvoyance, &c.; yet Professors, Judges, clergymen, lawyers, and thousands of all classes declare that they write to and get letters from the invisible world and ghostly people who “walk the earth unseen.”

\* The ghostly periodicals, conducted by spiritual knockers, table turners, and “mediums who have passed the change called death,” &c., amount in the United States, to 13, that is, 4 monthly magazines, and 9 newspapers! Can these and their numerous adherents be reasoned out of their delusions?

Voluminous octavos in prose and verse are rapidly accumulating from the "spirit land." May these knockers, table-turners, ghostly scribes, the chosen comrades of stupid gossips, the vulgar, ignorant, lying and indecent rabble of the Eternal World, be excused for murder? No act of Buranelli can compare in delusion (not to say anything of blasphemy, and indecency) with the conduct and writings of the editors of the spiritual newspapers in the United States, who fill their periodicals with the ineffable nonsense which they pretend to receive from disembodied fools. Buranelli's fistula had a foundation in truth, but he exaggerated the quantity of water, &c., discharged from his fistula. "I feel," said a sane pedlar, who was dying of yellow fever, "I feel like drinking the ocean dry"—Thus, "a shower of tears"—"watering graves with scalding tears"—"an ocean of tears," must not be construed by medical witnesses too literally, or novelists will not know whether murder is right or not. Dr. Samuel Johnson's behavior was in some respects, as much an insane delusion as Buranelli's extravagant assertions about his fistula. Dr. Johnson in leaving a house considered it essential for good luck always to put one particular foot forward, and if by chance he forgot to do this, he returned and took the first step with the appropriate foot—whether it was the right or the left is not recollected. Examples of such eccentricity and extravagance, whether real or affected, and still more striking, might be cited almost without limit. Bishop Berkeley, to whom was ascribed, "every virtue under Heaven," whose intellect was cast in a gigantic mould, denied the existence of matter, while his amiable and profound cotemporary, Hume, denied the existence of both matter and spirit. Were these philosophers insane and unable to know that murder is unlawful? Certainly their views of the non-existence of matter and mind would appear more absurd to the Jury than Buranelli's hyperboles about his fistula and Dr. Baller's bad surgery.

Drunkards, opium eaters, conjurers, and fanatics, often think, talk, and act far more unreasonably than Buranelli, but it would be unsafe for society to allow them to commit murder at pleasure, because they do not observe the strict rules of logical propriety. If pure and elevated reason were the test of sanity, the majority of mankind would be truly ranked among the insane.

It may not be amiss, to repeat once more, that Buranelli's folly about his fistula, &c., cannot be of any value in elucidating the murder which he subsequently committed. Than this, few deliberate murders have ever occurred which can be more readily accounted for without admitting the plea of insanity, or justifying a waste of sympathy. A propensity to suicide, disgust with the world, poverty, jealousy, expelled from Lambert's where his treacherous mistress lived and con-

spired with Lambert and his wife to turn out Buranelli without notice suddenly into the street, a houseless wanderer, very reluctantly permitting him a last interview, his letters treated contemptuously not having been answered—bitterly and it appears falsely reproached by the family, surely this man's crime proceeded from antecedents and motives of unusual potency in one of his melancholy temperament.

Jealousy alone, not to mention shame, was an all-powerful motive for the act which he committed. He expressly says that his paramour, "Mme. Williamson confessed to me that they [Lambert and wife] always spoke disparagingly of me and attempted by every means to cause the greatest disagreement between us; and they succeeded to the extent that Mme. W., told me she wanted to love me no more. She also told me that Madame Lambert had promised to give her a sweetheart—a Sardinian young man, who was to be lodged in the house." And yet Dr. Winslow gravely asserts that Buranelli slew Lambert "without apparently enough of motive to excite to the most ordinary extent of moderate revenge!" 10. "Buranelli ought not to have been hanged." 58.

The Medical evidence in Buranelli's case will now be summed up: it will be seen whether the great land-marks of common sense have been regarded.

Mr. G. McMurdo, Surgeon of Newgate where the prisoner was confined detected no symptoms of insanity in Buranelli: Mr. M., was asked—

"Q. During his stay in the gaol you have had conversations with him repeatedly, I think? A. Almost daily.

Q. Have you ever observed, in the course of your attendance upon him, or in the conversations you have had with him, any symptoms of aberration of mind? A. I have not."

Drs. Mayo and Sutherland, specially appointed by the Government (the former a distinguished author upon insanity) deposed to the same effect—as did others who had the best opportunity of personally observing the prisoner's conduct and conversation.

Dr. Mayo was asked: "Q. Will you listen to this definition of Dr. Winslow's, and tell me your opinion of it? 'A delusion is a belief in the existence of something extravagant, which has in reality no existence except in the *diseased* imagination of the party and the absurdity of which he cannot perceive, and out of which he cannot be reasoned.'

Mr. Justice Earle. That definition cannot be of the slightest use, because the premises do not exist."

Now such definitions, even where the premises are true, are like many other abstract definitions of very little use. For, if it should turn out to be true that half of the human race (an exceedingly low ratio)



should "believe in the existence of something extravagant," "out of which they cannot be reasoned," it does not follow that they are incapable of knowing murder to be wrong. Courts and juries, do well not to receive such verbal abstractions as criteria of human conduct and moral responsibility. It is better to read men—their characters, passions, motives, and principles—humanity in the concrete, taking common sense, observation, and experience as expositors of moral actions.

The medical testimony in favor of Buranelli's insanity, though it comes from men of very high character, carries with it internal evidence of its inconclusiveness, which no positiveness of theoretical opinion can overthrow, in the face of facts irreconcilable with the prisoner's innocence.

Dr. Baller's testimony on this question amounts to little :

"Dr. Baller. *Q.* You have said that you thought his mind unsettled ; will you explain what you mean by that? *A.* I said for this reason, that I found he was complaining again and again to me of this extraordinary and unfounded delusion with regard to his passing his urine in this manner.

*Q.* That was the reason, was it? *A.* Yes."

Mr. Surgeon Henry : *Q.* "Having observed the prisoner for this length of time, what was your opinion as a medical man as to his mental condition? *A.* I could have no doubt that he was not of sound mind.

*Q.* Did you form any opinion as to his power of judgement? *A.* From that circumstance he had no power of judging, and believed in the existence of that which was an absurdity—which did not exist."

Dr. J. Conolly : What is that opinion? *A.* The opinion is—I agree with the last witness—that the prisoner was not of sound mind at the time when these circumstances that have been mentioned occurred—especially the delusion, which is perfectly inconsistent ; a man cannot be of sound mind and have an absolute delusion."

These opinions of B.'s insanity are based almost exclusively on his hyperboles about his fistula !

He declared once or oftner, that "his bed swam with water" from his fistula, little dreaming that the philosophers of North would take his southern figures of speech literally.

*"Memorial to Sir George Grey, Bart., M. P., Secretary of State for the Home Department, in favour of Luigi Buranelli.*

"We, the undersigned, Physicians and Surgeons, having carefully examined the evidence hereunto annexed, relative to the case of Luigi Buranelli, now lying in Newgate under sentence of death for murder, do hereby express our solemn and matured opinion that the prisoner was insane at the time he committed the crime.

"We do further affirm that had we been consulted on the evidence now disclosed, as to the condition of the prisoner's mind before the act was perpetrated, we should have had no hesitation in subjecting him to medical treatment for mental disease.

"We, therefore, are confident had the prisoner been in a different rank of life, such steps would have been taken respecting him as would in all probability have prevented the commission of the murder ; and, accordingly, we earnestly pray that the extreme sentence of the law may not be carried into execution in the case of a person whom we believe to have been a lunatic when he perpetrated the act for which his life has been declared forfeited.

(Signed)

"JOHN CONOLLY, M. D., Consulting Physician to the Hanwell Lunatic Asylum, &c.

"WILLIAM BAILY, M. D., F. R. S., Physician to the Millbank Prison, Assistant Physician to St. Bartholemew's Hospital, &c.

"FORBES WINSLOW, M. D., D. C. L., &c.

"ALEXANDER SHAW, F. R. C. S., Surgeon to the Middlesex Hospital, &c.

"MITCHELL HENRY, F. R. C. S., Assistant Surgeon to the Middlesex Hospital, &c."

The aim of Dr. Winslow, in this book, is to prove that the execution of Buranelli is "a damned spot" in the records of British criminal jurisprudence. With this view, he animadverts with great severity upon the medical testimony of a contrary import, as if this was the fundamental question essential to the trial of the prisoner. Now leaving out of view the medical testimony of a purely theoretical kind, which is after all as contradictory as possible, and, therefore, valueless to non-professional persons, the facts of the case are such as a jury could pass upon with safety.

Throughout the whole of the testimony intended to prove that the truthful Burnanelli did not know the criminality of murder, there is a fundamental fallacy, namely, the gratuitous assumption that because this most unreliable, ill-tempered culprit, when greatly excited and alarmed as to the nature of his fistula and the quantity of water which it discharged, did, therefore, really believe his own extravagant and lying statements which he sometimes made in this behalf ! Verily philosophers are as credulous as patients, and murderers are artful and deceitful.

Mr. Shaw's extended document on Buranelli's insanity amounts to this, namely, "the conviction which I now entertain, that, when Buranelli committed the murder, his mind was not sound, rests mainly on his delusion concerning the urine passing through the fistula."

Of what value to a jury, or court are such absurd questions and insane answers extracted under oath, as the following ? Is there no danger of perjury in swearing that insanity "is generally seated in the" beard or little finger, &c.?

"Dr. Sutherland : Q. Where is the seat of hypochondriasis ? A. In the nervous system.

Q. Is it not in the mind? A. It is seated generally in the stomach; it is the effect of the nerves of the stomach conveying false notices generally through the system to the brain.

Q. May not hypochondriasis proceed to mental disease? A. Yes. In the first answer Dr. Sutherland points (it is Dr. Winslow who speaks) to the nervous system as the seat of hypochondriasis; but he appears subsequently to have imbibed more enlarged views of the locality of the affection, and refers the disease to the stomach, asserting that it is the effect of the gastric nerves conveying false notices to the brain! Strange pathology! Still stranger physiology! According to these novel views it would appear, in the words of Mr. Shaw, "That the stomach, besides the power of digestion, has an office like that of the sensorium, *viz.*, a power of judgment and comparison, and of forming either correct or erroneous impressions, independently of the—a function which no physiologist of past or present times has ever before attributed to it." Dr. Sutherland is subsequently asked the subjoined interrogatories:

"Q. If you find in combination with hypochondriasis suicidal notions and tendencies, and general depression and melancholy, would you not consider that evidence of a mind not sound? A. It would go a long way to constitute mental unsoundness.

Q. What would it require? A. DELUSION.

Q. Is not the idea of the bed being swamped with water a delusion? A. An illusion.

Q. What is the difference? A. An illusion is objective.

Q. Is a delusion subjective? A. It may be, but judgment must be involved."

It is highly probable that the court, jury, and government wholly disregarding such medical oaths as obstructions, and taking less equivocal evidence for their guide conscientiously consigned a guilty man to the gibbet—a man most dangerous to the well-being of society—a man in whom Dr. Winslow can see no guilt at all!

Neither the genius of christianity nor that of modern criminal jurisprudence seeks to punish the guilty for mere revenge. The murderer's life is not even offered as a satisfaction for the shedding of innocent blood, but for the benevolent purpose of deterring others from like crimes, and thereby protecting the well-being of society. The consigning of Buranelli to the gallows, provided the evidence was sufficient to establish his guilt (the medical evidence to the contrary being but a nullity) so far from fixing a "damned spot" upon British Jurisprudence, was a charitable, yet sorrowful act, imperiously required for the public weal.

Dr. Winslow concludes his eloquent and indignant denunciations against his compatriots, who could not discern Buranelli's insanity, in the following strain:

"We are aware that an opinion is current in certain quarters among some distinguished advocates and physicians, that insanity, even if clearly established, should not exempt a criminal from



the extreme penalty of the law. We do not for one moment believe that so unchristian and monstrous a doctrine is tolerated by the more enlightened members of the legal and medical professions. There are undoubtedly among both bodies, men who entertain extreme and ultra views respecting crime and punishment,—men not deficient in natural sagacity and not uninfluenced by feelings of humanity, who, being educated in the spirit and prejudices of the old school, consider the Throne, the Seat of Justice, and the State in danger, if any undue mercy is exhibited towards those who violate the sacred majesty of the law !

“Not hang a lunatic they exclaim, who has committed the crime of murder ! Not hand over to the tender mercies of the public executioner an insane person who has imbued his hands in the blood of a fellow creature ! If doctrines like these are promulgated, —if such principles are allowed to interfere with the legitimate administration of justice, who will answer for the safety of society, the security of state, or the life of the sovereign ? Thank God we have the happiness of living in an age when such obsolete doctrines can exercise no influence upon the understanding, the humanity, the character and conduct of those placed in positions of great legal trust and responsibility. Futile arguments and vain threats like these were, in more cruel and barbarous epochs, urged in defence of the rack, the thumb-screw, and other benevolent modes of prolonging human suffering. When Sir Samuel Romilly proposed the abolition of the punishment of death for stealing a pocket-handkerchief, the Commons of England consulted the Recorder and the Common Sergeant, who assured the House that such an innovation would endanger the whole criminal law of England ; and when the same excellent man afterwards proposed to abolish the disgusting and disgraceful punishment for high treason, the Attorney-General of the day said, ‘Are the safeguards, the ancient landmarks, the bulwarks of the constitution, to be hastily removed ?’—It was in consequence of this singularly ludicrous manifestation of fear that Mr. Ponsonby was induced indignantly to exclaim, “*What ! to throw the bowels of an offender into his face one of the safeguards of the British constitution ?*” In the spirit of Mr. Ponsonby, we ask, is it necessary for the vindication of justice,—is it essential for the safety of the statute-book,—is it required for the maintenance of the law and the dignity of those delegated with its administration, that a ‘miserable spectacle,’ like the execution of Baranelli, with all its associated horrors, attendant and unmitigated evils, should again occur in a civilized and Christian land ? God forbid that another opportunity should be afforded of witnessing so repulsive and disgusting a scene as that which accompanied the cruel death of this miserable lunatic. It spoke well for the humanity of the mob who at an early hour had congregated at the foot of the gallows, when they gave unmistakable utterance to their feelings of deep execration, horror, and disgust at the sufferings of the unhappy man. Can a more terrible image be conjured to the imagination than that of a public executioner, who, in consequence of his inexpertness in the adjustment of the rope, found it necessary during the convulsive struggles that ensued to hang by the legs of a criminal lunatic, for the purpose of expediting his death ! Out of evil, we pray to God that good may arise.”

"The execution of Buranelli, in the teeth of a strong protest, made a few days before his death, and in opposition to facts which if they did not conclusively demonstrate his lunacy to the satisfaction of the Judge and the jury, undoubtedly involved the matter in grave doubt and difficulty, establishing beyond all dispute a strong *primâ facie* case in favour of his insanity and irresponsibility, is a matter, as we have previously observed, deeply to be regretted and sadly to be deplored. May the INTELLIGENCE, the HUMANITY, the SCIENCE, the CIVILIZATION, the JUSTICE and the CHRISTIANITY of this great and justly renowned country never again be sullied or outraged by a repetition of so revolting an exhibition."

The report of the trial of Palmer, mentioned at the head of this article, narrates a case, probably the most important in a medico-legal and social point of view, known in the English Jurisprudence of modern times—a case, too, very suggestive of the uses and abuses, the certainties and the uncertainties of medical testimony in regard to symptomatology, pathological anatomy, and chemical analysis particularly in reference to strychnism. The natural history of poisoning with strychnine as compared to the natural history of diseases presenting analogous symptoms, the difficulty, not to say the apparent impossibility of detecting by chemical means (usually so reliable,) small quantities of one of the most deadly poisons soon or late after absorption into the animal organism, are topics of high scientific import to the well being of society, and to the administration of justice. It is not, however, intended to dwell upon these aspects of the Trial, but to notice, not only the encaution, discrepancies and contradictions in the medical evidence on this occasion, but more particularly to give a portion of the existing valuable pathological doctrines and practical views of many of the most distinguished medical men of London—views, not elicited by the material wheel or the rack but by the potency of oaths under the psychological and judicial torture, the screws, wedges, drawings and quarterings practised by august and inexorable judges, and by sagacious and skillful lawyers arrayed against each other, and but too ready to impale an unacceptable witness or drive him to suicide, that is to say, to make him contradict himself and destroy his own testimony.

The analytical examination of the last named Forensic Trial will be postponed until another occasion.

Before taking leave of the subjects examined above, it may be proper to add that the dissent from the broad proposition that medical experts are necessary for the detection of insanity, is restricted to cases not referable to any discoverable bodily malady, yet, physicians of much experience, particularly those in asylums for the insane, just as the keepers of the insane having the same general knowledge, observation, and experience in this behalf, would be the most competent and reliable witnesses.

—EDITOR.

(To be continued.)

REV. III. *On the Nature, Treatment, and Prevention of Pulmonary Consumption, and incidentally of Scrofula, with a demonstration of the Cause of the Disease*: by HENRY McCORMAC, M. D.. Pp. 111. 12mo. London, 1855.

The opening, prefatory paragraph of this work, which is subjoined, exhibits a summary prelusory of Dr. McCormac's fundamental views upon Consumption :

"CONSUMPTION and Scrofula in all essentials are one. Tubercle in its varied protean guises, is but the result of a deterioration of the blood, of the retention of excretions, carbonaceous and other impurities in the blood, where they have no business to remain. In consequence of the imperfect performance of the respiratory functions, these impurities accumulate. The time at length comes round when they must be got rid of, if not during and through the act of respiration, perforce otherwise. The result is their deposition as an inorganic matter in the form of tubercle, in the lungs and other organs, these, saving the diffusion of tuberculous blood, being perchance in other respects sound. A dead matter is deposited in the tissues. That which should be thrust aside, shovelled out as it were, is detained within the organisation. These all-important facts being positively determined, the cause and radical cure, in short the prevention of consumption and scrofula with all their concomitant ravages, are placed as absolutely as small-pox itself has been placed, within human control. There need now be no more consumption, no more scrofula, and diseases which have actually advanced as civilization itself has advanced, henceforth, now indeed and for ever, may be set aside."

Dr. McCormac, after some preliminary remarks, proceeds to investigate the nature of consumption—the constitution, the vital, chemical and predisposing cause of tubercular degeneration, together with the treatment and prevention of this malady.

It is not intended, on this occasion to inquire into the validity, but briefly into the import of Dr. McCormac's opinions as given in his own words. Whether these opinions are ultra or accurate—accordant to facts or results of enthusiasm, the reader must determine for himself.

"It is the object of this essay to show that the subject of phthisis may be cleared up, that its nature and origin may be demonstrated, and that a rational system of treatment and prevention may be laid down. The writer is of opinion that the malady which constitutes nearly a third of all chronic diseases, and perhaps a fifth of the actual mortality of the human race, may be brought into narrow limits, if not entirely set aside.

"Consumption, with all its frightful train, is simply, and truly, and only, a violation of the physical laws of our being.

"One of the first things then to be considered in the investigation of consumption, is the immediate source of the symptoms which bear the name. To this the unhesitating reply is, that they, these symptoms, are owing to the presence of the matter of tubercle, tubercle in the tissues and tubercle in the blood.



“What then is tubercle? It is a foreign body, a body that has no business to be present, obtruding itself instead of, in and upon, the natural fluids and tissues, but when present more especially in the lungs, constituting phthisis, or in other words, consumption of the lungs.

“Tubercle however, has no normal existence anywhere, and only makes its appearance in virtue of of a profound, deeply-seated degradation in the vital functions of man and animals. Consumption then, is owing to tubercular deposits, and to that superinduced state of the constitution which leads to such deposits.

“The composition and constitution of tubercle, from whatever part of the body derived, whatever be the age or even the animated being which is the subject of observation, are mainly alike. It consists principally of a hydro-carbon.

“Under no circumstances whatever, will tubercles be deposited in the absence of the tubercular temperament itself! This is a truth, as it seems to me, of the very last importance. If we keep away the tubercular temperament, we also keep away tubercle! If we permit the encroachment of the tubercular temperament, we likewise invite the encroachment of tubercles. One, we cannot have without the other. They follow, one the other, in inevitable and unvarying sequence, as gravity follows or rather attends, the presence of matter. This is no idle or illusory distinction, but a great pathological fact! Neither inflammation, nor colds-taking, nor starvation, nor inferior nourishment, nor chills, nor deficient clothing, nor excessive moisture, nor low spirits, nor bodily inaction, nor the suppression of eruptions, nor the retention of habitual discharges, nor exhaustion, nor abuse of mercury, nor intemperance, nor supposed hereditary tendencies, will in any case lead to tubercular deposits, in much or in little, whether phthisical or scrofulous, if there be not a tubercular habit of body, a cachexy, a dyscrasis, term it as we will, to superinduce them. But if there be a tubercular temperament, then these debilitating agencies or any of them, may and do often doubtless lend it a helping hand.

“Until recently, no opinion perhaps was more generally entertained than that of the inflammatory origin of phthisis, or as it was very often termed and considered, ulceration of the lungs. In fine, it may be laid down as a law that has no exceptions, that inflammation, unless in strumous or tuberculous subjects labouring under tubercle interior or exterior, or that dyscrasis which we term the tubercular temperament, will never lead to tubercle!

“For the first time in the history of the disease, I would proclaim that phthisis is absolutely within our control, that no one need become consumptive who does not choose it.

“For the first time in the history of disease, the proximate source of tubercle deposits is, in my opinion, capable of exact demonstration. The problem of causation may now in fine be solved. Tuberculous, scrofulous deposits then, whether in the offspring of scrofulous, consumptive parents, or the offspring of persons free from scrofulous, tuberculous disease, are alike in every case, owing to the insufficient, imperfect performance of the respiratory function. The carbon is retained, in

other words, it is not discharged or sufficiently discharged from the blood in the lungs, and finding no adequate outlet by the liver, skin, or other possible emunctories, being neither burnt off in the lungs nor expended in the tissues, is deposited mainly as a hydro-carbon, in the lungs and other organs, under the form of the bodies known by the designation of tubercles.

“What I mean is that an imperfect respiratory process fails to purify and renew the blood, which thus loaded with excretions and foulnesses, has as it were, no alternative but to deposit them as tubercles with all their consequent train of evils, in the different tissues.

“Want of exercise along with a constrained unnatural posture, tends indirectly to the promotion of tuberculous disease. A passive life indeed if it were only in the open air, would not lead to tuberculisation. The Turks sit from morning to night in their open shops, their courts and galleries, and are not thereby, so far as I can learn, observed to become tuberculous. In most climates however, and certainly in this, inaction and in door life are virtually synonymous terms.

“The practice of confining young persons of either sex, for hours together immoveable on their seats, is one barbarous in the extreme, and fraught with the vilest consequences. To be up and doing is ever the cry of nature to the young! I wish to deal in no exaggeration, but if we would really preserve boys and girls in health and stamina, if we would avoid consumption with all its train of horrors, we must not only permit but enjoin it upon them, to spend hours on hours daily in the open air, and above all perhaps, sleep in a pure night atmosphere. I do not say that this open air life should be all at a stretch, but at intervals, divided say into the morning, the mid-day, and afternoon hours.—I think that an aggregate of not less than four, and not more than six hours, might be daily devoted to this great object.

“I must explicitly and distinctly declare that the medical man or the patient who desires to realise a recovery in phthisis, whatever be the agent employed, else neglecting to enforce day and night, ever and always, the respiration of a perfectly pure and untainted atmosphere, an atmosphere renewing and revivifying the blood, need hope for no success. This indeed must be the indefeasible correlative of every and any mode of treatment. Combined with this, any treatment not directly or indirectly hurtful may succeed, without it no possible treatment can otherwise than fail. A pure, fresh, untainted atmosphere, at all hours, times, and places, is the one single condition, which nothing whatever must interfere with or set aside. The best and only real prophylactic is the unintermitted respiration day and night, of a pure and untainted atmosphere. If this be only continually respired, there can be no consumption, no tubercle. Suffice to say it, the air day and night, must be pure and incorrupt, else there can be no prospect of recovery or even of rest or partial relief, short of being drenched or stupefied with narcotics, drugged with prussic acid, or chloroform. It is impossible that the blood can be purified, it is impossible that it can discharge its carbon, it is impossible that it can be regenerated by the vivifying oxygen, it is impossible in fine that the patient can recover, if the atmosphere which he habitually respire be not suffered to be as pure as God hath made it

and given it to us, and, convinced as I am of my existence, as he intended us all, sick and well, to make use of it. Sound respiration will not, cannot ensue in an unsound atmosphere ! This is a sentence which I should wish to inscribe on every stethoscope, every sick room, indeed over every chamber-door. It is a precept however, which is continually, and indeed, all but universally violated. Yet, it is one which must be as continually and universally observed, if we would accomplish any good in the treatment or in the prevention of consumption.

“ Contrary to the general prepossession, air is as good, nay better by night than by day. The night air as such, never injured any one, it is only impure or chill air that does so. How indeed is it possible to have any air at night except night air ? Impure night air kills, just as impure day air kills.

“ It was once a general medical prepossession in truth, that taking cold, that the damp night air, was a source, the source indeed of consumption, but this was a great error. The respiration of the coldest, dampest air will never, never did since the world began, induce consumption. It is only the respiration of dirty, foul, unrenewed air that induces consumption, else, so far as this is concerned, the coldness or the warmth, the dryness or the dampness makes no sort of difference. If only the air be pure, however cold, however damp, however dry, there will be no consumption. But if the air be impure, however dry, however warm, there consumption, if this impure be habitually respired, will be sure to follow.

“ In nothing is a greater change conspicuous than in the regimen, the meats, the drink, and general treatment of the consumptive sick. It was asses' milk, tapioca, and arrowroot, and jellies, animal and vegetable, and soups, nice enough to taste, and smell, and look at, but very useless and unserviceable in everything that regards the maintainance and restoration of the health and stamina of the sick. Roast meats and boiled, fish, flesh, and fowl indeed, both wild and tame, oysters, milk, fresh curd, and farinaceous matters, good bread, vegetables and fruit, tea, chocolate and coffee, sugar, good wine, porter, and brandy, all, under judicious regulation and management, are the fitting aliments of the consumptive.

“ I am most earnestly and conscientiously of opinion that as every case of consumption might be prevented, so ought we to look upon every case of the disease if taken at the earliest period ere the tubercle deposits have become considerable, as removeable.

“ One hundred thousand human beings throughout these islands not now in consumption, will nevertheless, display the frightful symptoms of that disastrous malady within half a year ! One hundred thousand persons at this moment within the bounds of these three Kingdoms, are perishing of phthisis, while one hundred thousand more are as it were preparing to replace them. Nothing in fact but our past ignorance as to the nature and pathology of phthisis, could ever have justified the general employment of remedies sometimes effete and useless, at others positively injurious. I feel ashamed at once of myself and of my profession when I find a substance like fish-oil exhibited in tons with the avowed object of removing and preventing a disease like consumption !



The codfish in truth, has taken precedence of the cow. But the employment of codfish oil, whether to prevent or remove phthisis, will lapse into as well-deserved oblivion as the practice, once so general, of sending consumptive persons into cowhouses, among cows perchance themselves consumptive, has done.

“Preparations of iron, the saccharine carbonate for example, made by mixing equal parts, say one ounce each of the carbonate of soda and the sulphate of iron in a pound of syrup or treacle or formed into boluses with mucilage of gum tragacanth, else the lactate and tartrate of the same metal, metallic iron even duly comminuted, these or any of them, prove serviceable in persons of weakly, pallid habits, white lips and tongue, habits in short deficient in the blood-genesis of this important metal, a factor indeed, and a most important one, in and of healthy life. I do not here dwell on the bath or the other indispensable means and appliances of daily habitual purity of person and environment. My main and leading object has been to point out and establish the real sources, immediate and remote of tubercle, and the sequential means, the only means in short of remedying it when present, but above everything else, of preventing it altogether when not present, thus filling up I would fain believe, a hitherto lamentable hiatus in our knowledge of disease, and establishing a natural law, equally important in its character, range, and consequences, as any physiological natural law whatsoever. For pathology rightly understood, pathology human and comparative, is but the physiology of disease, disease but perverted life.”

The above copious extracts from Dr. McCormac's work, much as they may seem to be tinctured with utopianism, are important, seeing that they relate to the most fatal of all maladies, namely, consumption, which the author hopes to exterminate or rather prevent by hygienic measures. A hopeful pathologist is better entitled to a hearing than a sceptical or despairing one. Some enthusiastic physiologists have supposed that life might not only be greatly prolonged, but be perpetuated indefinitely, by judicious hygienic measures, suitable marriages, and other means for the improvement of the species. Were their measures well devised and fully carried into effect, people would still die, but probably the average health and longevity of the race would be greatly improved and extended.

If Dr. McCormac (who, by the way, is a voluminous author in medicine and philosophy) has overrated the prophylactic efficacy of exercise and pure air as infallible preventives of consumption, his book will not have been written in vain, should its hygienic recommendations be carried into effect.

If Dr. McCormac's estimate of the preventable death from consumption, in Great Britain be correct and applicable to all nations, a similar ratio of prevention would, for the entire world, save from an untimely grave two or three millions annually, in like manner ! Happy day ! when either prevention or cure shall attain this desiderated universality.—ED.

REV. IV.—*The causes and Curative treatment of Sterility, with a preliminary statement of the physiology of Generation; with colored lithographs und numerous wood cut illustrations:* by AUGUSTUS K. GARDNER, M.D., permanent member of the Nat. Med. Assoc.; Fellow of the New York Acad. Med. &c., &c. &c. Pp. 170. 8vo. New York: DeWitt & Davenport. 1856.

Female Sterility, the topic which Dr. Gardner has examined with ability and perspicuity in this volume, is one full of interest in its psychological, pathological, therapeutic, social, and family relations.

The author's opportunities for observation, as stated in his preface, appear to have been very extensive in practical obstetrics and in the maladies peculiar to females, having extended to "many thousand cases." Although Dr. Gardner's researches into the literature, nature, and treatment of sterility have been considerable and praiseworthy, yet, a perusal of his work, will show the reader that the practical advantages claimed by the author are little seen in his pages, which latter, seem to be chiefly occupied with the opinions and lore of others, for the most part concerning the physiology of generation, surgical diseases, uterine displacements, and the mere common places of the ordinary elementary works.

"This subject," says Dr. Gardner, "is here enlarged upon, because there is no treatise in our language, upon this subject which gives a correct statement of the knowledge of this century, and of the present decade." How true so ever this may be as to the non-existence of special treatises on sterility in the English language, none but a sorry sciolist destitute of recent works on physiology and on the diseases of women, will find much difficulty in getting the information contained in Dr. Gardner's treatise.

Of the causes or conditions of Sterility, Dr. Gardner says,—“Occasionally these conditions arise from a defect in the provisions of nature, almost always, however, are the consequences of disease. Sometimes the difficulties have been suffered to continue unchecked, till organic changes are effected, which can never be palliated.”

Dr. Gardner commences his work with a brief account of the physiology of generation, including some anatomical remarks upon the uterus. Of the canal of the cervix uteri, he says, “when of natural size and without disease, it *will not* allow an ordinary Simpson’s uterine sound to pass through it without pain and a very decided pressure generally followed by a bloody flow”—24—“with difficulty admitting a small probe”—“in its healthy virgin state, when not menstruating, no *instrument* of any size can be passed into the cavity of the uterus without injury

to the living membrane. A large instrument cannot be passed without force, and a small one will seriously lacerate and puncture the mucous membrane." 25. The italics in the quotations are the Doctor's own.

These anatomical difficulties are strangely ignored when Dr. Gardner enters upon the manipulation of the womb and its cervical canal. In his treatment of uterine displacements and versions, he says: "The uterine sound passed into the os uteri, with pressure upon the fundus uteri by the finger through the rectum, will often restore a recent case of retro-version. When this displacement is chronic, the cure is also chronic, frequent introduction of the sound into the neck of the os uteri allowing it to remain a considerable period daily in the cavity, until the internal surface has become accustomed to a foreign body, and then introducing Simpson's internal uterine supporter, &c. 23. 24. Dr. G. gives a figure of this instrument reduced greatly in size; but the stem which enters the cervix and womb must in order to correspond in size with the residue of the apparatus, be one or two inches in circumference! Of this instrument Dr. G., says, "I consider it my duty to speak commendingly of it, &c. One of the great objections urged against this instrument, is its rigidity; it remains in a fixed position irrespective of any change in the position of the body, is frequently painful from pressure, liable to effect immense injury to the wearer, should any accident or shock happen to her." 25. Furthermore, in regard to "the contraction of the internal membrane" of the cervical canal, he says: "A probe of sufficient size should be passed within the small canal, an ordinary male bougie; to be followed by larger ones; Simpson's sound carefully graduated, &c."

With the same views tents of gutta percha, strips of sponge, and so forth, are recommended to be inserted into the canal of the cervix uteri, as dilators: "When the stricture is midway, or affecting the entire length of the canal, or the os internum, the treatment does not materially differ." 149.

Dr. Gardner dwells upon the anatomy of "the virgin cervix uteri; its longitudinal and transverse rugæ, lying in corrugated folds, &c." "The end of the sound is not unfrequently caught in these rugæ, crypts; and sulci, and the operator may perhaps imagine that the stricture causes the resistance, which may be overcome by increased pressure, in doing which he will run great danger of lacerating the living membrane, and of forming a false passage, thereby causing great subsequent inflammatory difficulty." "The probe pessary of Simpson, so ridiculed as the 'impaler,' from which I have known marked benefits to arise, &c." It is surprising to notice the freedom with which virgins, with unruptured hymens, undilated vaginæ, with canals of the cervix-uteri so small



that "*no instrument of any size, can be passed without injury,*" are nevertheless treated to vaginal and intra-uterine pessaries, of almost every shape from globes to probes and points, nothing being said of the anatomical difficulties, dangers and great uncertainties attendant on these manipulations as recognized from the anatomical platform of these same adroit manipulators, and the more so, because in a great majority of these cases, the canals aforesaid are diminished in their calibres from inflammatory engorgements and deposits, to which must be added an excessively increased irritability and morbid sensibility. The irritability of the cervix uteri is illustrated by the following curious exploit: "I passed a loose piece of the nitrate of silver," says the Doctor, "about three-quarters of an inch in length, into the cavity of the cervix, by means of a long pair of forceps, and as fast as it was introduced and there left, it was immediately pushed out by the contractions of the neck of the uterus, and with so much force as to be thrown out of the vagina." 26. Nothing is here said of the curve in this canal as obstructing the discharge of this "loose piece"; it must have passed through a speculum. Even a gun cannot shoot around a corner.

With regard to "disease and stricture of the Fallopian tube, and especially of the uterine end," says Dr. Gardner, "theoretically there is little doubt of its existence, but practically there is immense doubt of the possibility of recognizing it, save, perhaps, in some exceedingly rare instances. The recommendation of some recent English writers, Tyler Smith the originator, of passing a bougie into the os, and through the cervix, and thence into the Fallopian tube, is so seemingly impossible that it has scarcely been considered worthy of a thought by the profession, and the professor himself no longer urges it as a means of cure." 156-7.

As an original contribution to the anatomy, physiology, and pathology of female sterility, this book has no very high claims, being an example of male sterility, in an author claiming a prolific experience. If Dr. Gardner has added little from his own personal observations and practice, he has borrowed much, and condensed well, and has, thereby made a good book, which, to physicians whose libraries are ill-supplied with works of this character, must be acceptable and instructive, being withal very attractive to the eye in typography, paper, cuts and lithographs—a book, too, which will probably sell readily, in defiance of critics.

The most original idea in Dr. Gardner's book, is one very flattering to "Young Physic," in all that relates to female and even male maladies, but his theory damages the gray beards, whom he repudiates altogether: "the old physician," quoth he, "is slow to adopt new ideas,

&c." "The knowledge of first principles, can, as a general thing, be properly and easily attained but in comparative youth, &c." "The feeble finger may discover a gaping os, or the ravages of cancer, but the true eye, and the *tactus eruditus* of younger years, are easily discernible." Dr. Gardner intends neither wit nor irony in this behalf; although the superiority of young doctors in the matter of female sterility, in a certain physiological point of view, is conceded, but in pathology the old ones are best. The early French writers upon the climate of New Orleans, maintained that the drinking of the waters of the Mississippi river caused the great fecundity generally noticed among the females of the city; but it is reasonable to suppose that this was not the sole cause.

Is the colored lithograph which serves as a frontispiece, intended for ornament or use? Seeing that it is essentially reproduced (plate v fig. 2. p. 129 and in the text, 84-92), and that both are referred to in a general way as representing the same objects; it might seem, therefore, to be only a *gratuitous embellishment*. No engraving required for scientific illustration can by any possibility be repugnant to good taste. Science knows no shame. Nothing which contributes to the good of humanity can be indelicate in the *sanctum sanctorum* of legitimate medicine. Here there is no gratuitous indecency allowed. *Noni soit qui mal y pense.*

Doubtlessly "*the raspberry os*," with its form and color, deserves a pictorial representation, but neither in this behalf, nor for operative purposes thereunto pertaining does it seem necessary to give a complete panorama of the female genitalia, colored to life, and complete to the minutest hair, leaving the "*os*" as but a secondary figure! At least one colored plate of these should suffice. That which serves as the frontispiece is the more ravishing of the two; the "*os*" being greatly subdued. This, and indeed all the colored lithographs being destitute of lettering, numerals, and references indicative of the several organs represented, seem to be wholly ornamental. Readers acquainted with anatomy do not need so much artistic labor; others not so informed cannot, of course, divine the organography at all.—EDITOR.

## MISCELLANEA.

ART. I.—*Gleanings,—Pharmaceutical, Chemical and Medical.—*  
*Extract and Plaster of Belladonna.*—Mr Thomas Southall, (Pharm. Jour. Feb. 1856,) good authority on this subject, thinks the carefully dried leaves of narcotic plants, when extracted by diluted alcohol,

afford extracts superior to those obtained by the inspissation of their expressed juices. He also recommends the hydro-alcoholic extract of Belladonna, in preference to the inspissated juice for making Belladonna plaster. Ordinary extract of belladonna, when used, is softened by water with the aid of heat till of a syrupy consistence, and then sufficient alcohol added to precipitate the gum and other matter insoluble in that fluid. After filtration the alcohol is regained by distillation and the evaporation continued till the extract has a thick honey-like consistence, when it is incorporated with the proper proportion of adhesive plaster previously melted. Thus made, Belladonna plaster adheres firmly to the skin and is more readily spread.

*Comp. Fluid Extract of Tephrosia Virginiana.*—Dr. B. O. Jones of Atalanta, Georgia, recommends a preparation made by boiling eight ounces of Tephrosia Virginiana, (the plant,) and two ounces of Rumex acutus in four quarts of water till reduced to one quart and then strain. When intended to be kept, mix with an equal bulk of diluted alcohol or brandy, and half its weight of sugar, macerate for several days, and strain through muslin.

The dose of this preparation is one to two tablespoonfuls. Dr. Jones describes this as a mild, stimulating tonic, having a slight action on the bowels, and the secretive organs generally, and applicable in the treatment of many diseases, especially in a certain stage of typhoid fever where there is little use for active medicine. Dr. R. E. Griffith, (*Medical Botany*, 238) says of this plant that "the roots were used by the Indians as a vermifuge, before the settlement of the country by the whites, and a popular remedy in many parts at the present time, the mode of administration is the decoction; which is said to act powerfully, and to be as effectual as Spigelia; it has not, as far as can be ascertained, been employed in regular practice; but it deserves a fair trial, as other species are possessed of active qualities, especially of a purgative character."

*On the Therapeutic Action of the Vapor of Bi-Sulphuret of Carbon.*—Dr. Calvin G. Page (Boston Med. and Surg. Jour., page 77 1856) recommends the vapor of bi-sulphuret of carbon to be applied externally, for neuralgic and rheumatic pain, by holding a wide-mouthed vial, containing half a drachm of that liquid, so that the vapor will be brought in contact with the part affected. The vapor produces at first a sensation of coldness, then a feeling of warmth with prickling, which rapidly increases until it can no longer be borne. Dr. Page believes it to be a valuable agent for the temporary relief of pain, and in certain cases with permanent benefit.

*Aconite and Horseradish root.*—Robert Bently, Prof. of Botany and Materia Medica to the London Pharmaceutical Society, in a lucid paper published in the April number of the Pharmaceutical Journal, says: "Several fatal cases of poisoning have occurred by the accidental substitution of monkshood, or, as it is commonly called, aconite root, for horseradish," and then gives a minute description of this root, accompanied by an engraving of the roots, of several species of Aconitum. This substitution of roots, so different in appearance and



sensible properties, might be wondered at, did not equally improbable mistakes occur nearer home. But a short time ago, two cases of poisoning occurred from eating the root of *Cicuta maculata*, or water hemlock, in mistake for some edible root. As Aconite is not found in the United States beyond the precincts of the ornamental garden it is not likely that this mistake will occur here.

*Accidental poisoning by Aconite.*—At the assizes of Armagh, March 7th, James McCaull and Samuel Townley Connor, assistants in the shop of an apothecary, at Newry, were indicted for manslaughter, because through ignorance or carelessness, they had caused the death of Capt. Kent, by using tincture of aconite root for tincture of chiretta. The prisoners were found guilty, and sentenced to the punishment of four months imprisonment.

*Fecula of Colchicum Autumnale as a source of Alcohol.*—M. F. Comar an élève of the School of Pharmacy of Paris, states, (*Journ. de Pharm.* Jan. 1856) that the fresh bulb of *Colchicum*, yielded to him 21 per cent. of starch granules, and that he was unsuccessful in detecting inulin, which has been announced as an ingredient of the cormus of this plant. M. Comar thinks this large per centage of starch is worthy of attention as a source of alcohol; and by an experiment, extracted 64 centilitres ( $1\frac{1}{2}$  pint) of that fluid from 14lb. of the fresh bulbs.

*New Test for Nux Vomica.*—Vielgruth has proposed the following simple test for nux vomica. A few grains of the substance supposed to contain nux vomica is treated with proof spirit. The tincture is evaporated to dryness, at a temperature not exceeding 95.8 F. A drop or two of dilute sulphuric acid is added to the residue. The whole is again exposed to the above mentioned temperature; when, if nux vomica is present, a beautiful, carmine-red color ensues. If the heat be stopped in ten or fifteen minutes, the color disappears, but will reappear with less brightness on reheating.—*London Lancet.*

*Paper containing Arsenic.*—Vohl has found in a grey kind of blotting paper, about a grain of arsenic, five sixths of a grain of copper, and one grain of oxide of lead, per sheet. Such paper should be avoided in filtration, especially by the toxicologist. He attributed the presence of arsenic to Schweinfurt green dye in some of the rags used to make the paper.

*Aluminium as a substitute for Silver.*—M. Regnault, of the imperial porcelain manufactory at Sevres, does not believe that aluminium will meet the expectations that have been created in its favor, as a substitute for silver. He thinks it difficult to procure it pure; that in the Universal Exposition, containing over 10 per cent. of other metals, and its color is affected by them. It is extremely brittle, not easily drawn, and is an exception to the general atomic theory. Some spoons and forks seen at Bailey & Kitchen's, Philadelphia, made from French aluminium, present a decided contrast to silver, being more on the Britannia ware color.

*Oleo-Margarate of Zinc as a substitute for Lead Plaster.*—M. de Mussey, during a residence at the Pyrenees, (says the *Boston Med. Jour.*) was struck with the fact that in those patients who made use of diachylon plaster, a black stain was caused by contact with the sulphu-

rious water of the baths, in all places to which the diachylon had been applied. It was found that if the skin had been in contact with this preparation for a few minutes only, a sufficient quantity of lead would adhere to form a thick layer of sulphuret of lead, after being plunged in the water which was with difficulty removed. Simply handling the plaster was enough to produce the same reaction with the mineral water on the fingers. This fact suggests that lead poisoning may occur by the external application of lead in this form. At the request of M. de Mussey, M. Boileau, Jr., of Luchon, in the Pyrenees, made some "zinc plaster" by precipitating white soap in solution with sulphate of zinc, and afterwards adding to the dried precipitate, resin, etc., as in diachylon. Its efficacy as a substitute for lead plaster has been tested affirmatively.

*Diabetic Sugar secreted most abundantly after Meals*—M. Baudrimont, (*Journ. de Chimie Méd. Février, 1856*) in making a series of experiments on the urine of a diabetic patient, found that a litre (two and one ninth pints, of urine voided two or three hours after dinner, yielded as much as three per cent. (463 grains) of glucose, whilst that tested on the following morning yielded but a trace. He therefore suggests that experiments made with a view to the presence of diabetic sugar should apply to the former period, and not, as is too frequently the case, to that obtained in the morning.

*Action of Sugar on the Teeth*.—M. Iarez, (*Journ. de Chimie Méd. Feb. 1856*) in a course of investigation, arrived at the following conclusion, viz :

1. Refined sugar, from either cane or beets is injurious to healthy teeth, either by immediate contact with these organs or by the gas developed, owing to its stoppage in the stomach.

2. If a tooth is macerated in a saturated solution of sugar, it is so much altered in its chemical composition that it becomes gelatinous, and its enamel opaque, spongy, and easily broken.

3. This modification is due, not to free acid, but to a tendency of sugar to combine with the calcareous basis of the tooth

*Preservation of Vaccine Virus in a liquid state*—Dr. Maurin (*Journ. de Chimie Méd. Mars, 1856*) says that glasses charged with the recent virus can be transported to great distances, and the virus preserved fit for use without moistening, by enveloping the glasses containing it in some fresh beet leaves, being careful to renew these leaves when they commence to fade or decay, say every 8 or 10 days. Dr. Maurin has used vaccine matter thus preserved for more than a month, with the best results.—*Am. Jour. Pharmacy.*

## ART. II.—*Physicians and Pharmaceutists and their Relations:* by J. M. MAISCH.

It is a bad practice for apothecaries to undertake the treatment of diseases ; such a course has been denounced by all true practitioners of medicine and pharmacy. On the other hand, physicians who set up

drug stores of their own are equally censurable. Physicians have an aversion to allowing their prescriptions to be put up at such establishments, if it be only for their not liking to have their recipes and mode of treatment criticised by other physicians whom they do not wish to consult. Such stores, therefore, are intended for the physician's own practice; but if their practice is so large as alone to support an apothecary's establishment, however small it may be, they certainly cannot be expected to pay much attention to it. Wherefore, then, keep the store? A clerk, however insignificant his knowledge and experience may be, if he has learned to read his physician's hand writing and compound the medicines he prescribes, is very often to be found at such a store, which has been commenced for the sake of money-making. Certainly any man is worth a just reward for his labor and services, but we oppose the notion of the vocation of a physician or pharmacist being only a source for making money as fast as possible; and as much as we denounce the practising of medicine by an apothecary, just as much we are opposed to the practice of pharmacy by a physician. We are aware of the fact that circumstances may compel a physician to be also in some degree an apothecary and act as such, just as an apothecary, may in cases of emergency, be called upon to prescribe remedies without waiting for first consulting a physician. But such cases will be of rare occurrence, except in thinly populated districts and in seasons of epidemics.

Physicians and pharmacutists do not always regard their mutual and reciprocal interests. But one of the grossest misunderstandings of these interests is the demand, by the physician, of a *per centage* of the charges for medicines of his prescriptions. We cannot say how far such a demand exists, but we know that it does exist. It is but very seldom that it can be found out; then it is the interest of both the physician and apothecary to keep it secret, and the necessity of this secrecy already shows the meanness of such a bargain. If a physician insists on a reward of this kind for allowing his patients to get their medicines at a certain place, the apothecary may perhaps be compelled to submit to the demand, in order to win for his business the confidence of the public, and to increase the number of his customers. But will any or both these objects be really gained? We have reason to express our doubt as an answer to this question. Evidently the pharmacist wants pay for his labor and for the medicine, and we think, in most cases, he will charge in conformity with the value of the ingredients of the medicine and the amount of his labor; and such a charge we will call reasonable and moderate, a compensation rightfully belonging to his skill and devotion to the profession. Now, he either has to charge a corresponding sum more for the medicine, in order to obtain what is due to him after paying the demanded *per centage* to the prescribing physician, and then he over-charges the public, or, without overcharging, he pays the *per centage*, and consequently loses the reward for his labor. In both cases it is an extortion, either from the public or from the pocket of the pharmacist. We know a physician who obtains 25 per cent. of the charges for the medicines prescribed by him, and his patients have to pay one third over the real value of the same, charges for labor, &c., included, so that the physician, who of course demands pay for his consultations and visits, may pocket the agreed upon one-fourth of it. Others we know obtain 20, 15, 12½ and 10 per cent in this way. By and by



the public will find out that they constantly have to pay a high price for their medicines and will call in another physician, for the first one would not allow them to carry their prescriptions somewhere else, under the plea that this was the nearest, if not the only establishment where he knew his prescriptions were put up accurately. Ultimately the taking off per centage must prove at least disadvantageously to the physician and to the apothecary also.

We have tried to give an outline of some wrongs clinging to the practice of medicine and pharmacy; in doing this, our object has been to draw the attention of physicians and apothecaries to the same, not as to something new, but as to something that demands the co-operation of both professions for its removal. Once in a while a voice has been heard in opposition to such wrongs; projects to subdue them have been published, but little notice has been taken of them. Could not the medical and pharmaceutical journals of the country take up the subject in earnest—open their pages for a discussion of these evils, and the propositions for their suppression? We repeat what we have before said: in many cases physicians and pharmacutists do not pay much attention to their mutual and reciprocal interests. It is only by their harmonious action in general that their vocations can attain that esteem and influence in common life and in science, to which they are both entitled, and the commencement of that harmony, we think, should be a decided stand against the grossest evils, which are apt to drag science down to the dust of humbug and quackery.—*Am. Jour. Pharmacy*, May, '56.

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ART. III.—*The Three Phases of a Surgeon's Professional Life.*—M. VELPEAU, who, besides being an eminent surgeon, is an excellent and extremely witty speaker, introduced the other day, in his speech on the Use of Setons, at the Academy of Medicine, the following sketch which our readers will certainly thank us for translating: In my professional career, there have been, as is the case with most medical men, three successive phases. The first, very short, during which, relying on the teaching of my masters, I readily accepted as the type of truth and without much controlling scrutiny, what I had been taught. In the second period, that in which the ardour of youth had full scope, I examined more closely into facts, and began to try and strike into new paths, without much minding what I was upsetting in my progress. (At that time, I had strong doubts as to the efficiency of issues and setons, and it would be easy to quote passages from my writings against these therapeutical means). At last came the third period, when a man begins to commune with himself, looks into the mass of facts which he has collected, and endeavors to test the value of what he has observed, without neglecting the teachings of those who for several centuries have gone before him. The result is, that I am now less averse to issues and setons than I was some years ago.—*Med. News.* Phila.

ART. IV. *Uninary Calculi in India*.—At the meeting of the Glasgow Medico-Chirurgical Society (March 11th, '56), Dr. Lawrie exhibited a collection of fifty-six urinary calculi, presented to him by a professional friend, the produce of operations on natives of India, at a station on the Punjaub, about fifty miles from Lahore.

He detailed their chemical constitution, which had been ascertained from accurate analyses executed by Dr. Rowney, and which, spite of great differences in point of diet and habits on the part of the subjects of operation, exhibit a marked general resemblance of that of calculi extracted from our own countrymen. He further compared the mortality in those cases, which, like that of operative surgery in general among the oriental races, was small compared with the general mortality in this country, and the special mortality of the Glasgow Hospital. The Indian mortality, despite the great size of many of the calculi and the advanced age of the majority of many of the patients, amounted to 9.33 per cent., or 1 death to 9.71 recovered; while the general mortality of Britain seems to reach 1 death to 6.25, and of the Glasgow Hospital to 1 death to 7.25 recoveries. He concluded by calling attention to the remarkable size of many of the specimens, the heaviest of which 2143 grains, or very nearly 4½ ounces.

We hope to lay Dr. Lawrie's paper before our readers in the next number of the Journal.—*Glasgow Med. Journal*.

ART. V. *Puberty in the African Negro*.—The following quotation from Robert Clarke, Esq., author of a paper "on the period of Puberty in the Negro Race" (in the Journal of the Statistical Society) appears in the report on Midwifery (Br. & For. Med. Chir. Rev., for April:)

Mr. Robert Clarke says, "With respect to the period of puberty in the Negroes, all my inquiries have tended to show that it commences about the age of ten or twelve years. Girls who have arrived at this age, and much beyond it, may be occasionally observed walking the streets (of Sierra Leone) naked, with the exception of a long strip of white calico, which hangs before and behind below the knee, from a circlet or zone of beads which surrounds the loins, and which scarcely covers the genital organs. The streamers are the signals of the girl's being marriageable. During the presence of the catamenia they are deemed unclean, when a colored strip of calico is substituted, to intimate the presence of the secretion."

ART. VI. *Alexis St. Martin*.—The well-known subject of Dr. Beaumont's experiments on the gastric fluid and digestion of the stomach, Alexis St. Martin, recently visited this city, in company with Dr. Bunting, of Montreal, and, at a meeting of medical gentlemen at Dr. De-

lafield's, he exhibited the opening into the stomach. It will be remembered that this opening was caused by the accidental discharge of a gun, in 1822, St. Martin being then eighteen years of age. In 1825 the experiments were first begun. During the time he submitted to the experiments of Dr. Beaumont, he states that his health declined; and as he suffered considerable inconvenience, he has so carefully avoided medical men since, that no one has been allowed, even to examine the wound, until he came under the charge of Dr. Bunting. He is now fifty-two years of age, in apparently rugged health, and has supported himself by hard daily labor since leaving Dr. Beaumont.—*New York Med. Jour.* May, 1856.

ART. VII. *Trees and their Nature*.—The Glasgow Medical Journal for April, 1856, contains a short but commendatory review of Dr. A. Harvey's new work\* on trees, quoting and adopting from the same, the following opinions and explanations:

The proposition is this: That all plants without exception, even those called *perennial*, are strictly *annual* plants, live therefore only one year, and reach their full size within the year; that is to say, that all plants spring up year by year either from seeds or buds, and attain their maturity within the year, forming, in the course of it, either seeds or buds, or both seeds and buds, for the production of similar plants the following year; that as the season advances, their vital actions languish, and their organism becomes drier and more rigid—changes these which constitute their old age; that at the close of the season they die; and that on this happening, the materials composing them speedily undergo either an entire or a partial disintegration—in the one case *wholly* disappearing, in the other some portion remaining to serve ulterior purposes in the vegetable economy of nature, but still remaining only as *dead* vegetable matter.

A tree is simply a "*corporation sole*"—a collection, aggregate, or congregation of annual plants of the same species, the production of a series of successive years, the individual plant of each year shooting up in spring from buds adherent to the persistent dead remains of the plants of the previous year, growing as parasites on these remains, putting on the character of old age in autumn, and speedily thereafter dying—provision, however, having been made by them in summer, in and by the formation of buds for the reproduction of similar plants the following year: and that being thus evolved, and thus growing from year to year, and having no actual limits to their reproduction in this way, there is in point of fact no actual limit to the age or to the size to which the tree collectively resulting from them, or produced by them, may attain.

\*Trees and their Nature: or the Bud and its Attributes, in a Series of Letters to his Sons. By ALEXANDER HARVEY, A. M., M. D.; Pp. 236. London, 1856.



That the woody layer is both structurally and physiologically the roots of the young plants that issue from the buds, I maintain. Nor will it, I think, be difficult to demonstrate that they are. That in the manner of its formation and growth there is a peculiarity, I readily allow. That is to say, I allow that with the exception of a small portion, the fibres composing it do not actually *creep* and grow *downwards* from the base of the buds and young plants above to the soil below. The portion which I except is that part of the root beginning at the *tip* of the last year's root, and thence extending a short way beyond it into the soil. This portion does in fact creep and grow downwards, just as does the root of the seedling. Excepting this part, however, I admit that there is the peculiarity mentioned attaching to all the rest of it. And for that peculiarity I not only see a *reason*, but in it I see also a singularly ingenious *contrivance* to obviate a difficulty which the circumstance of trees create, and to meet which, a strict adherence to the rule of ordinary annuals would have been a clumsy expedient.

Such is the condition of the tree in autumn, and such the provision made for the growth of next year's tree-plants. In spring the bud growing in the first instance at the expense of the pith, sends out a shoot, which *rises upwards* and puts forth leaves; sap ascends from the soil and passes to the leaves. Being there elaborated, a portion of this sap again descends, in order to the development of the Cambium-layer. From all that portion of this layer that as yet exists (and which extends from the summit of the last year's shoot to the extreme point of last year's root,) there is ultimately evolved three distinct tissues—woody tissue, cellular tissue and bark tissue—the bark lying outside and enclosing the other two, the cellular connecting the wood and the bark. Grant that all these are formed as they lie (*in situ*.) It is not, however, the whole account of the matter. For, from the lower end of the Cambium-layer, at the point where it is in contact with the *tip* of last year's root, a new root comes off which does in fact *creep downwards*, which *descends* into the soil, just as from the bud at the other end of the Cambium-layer the shoot *ascends* into the air.

The reviewer concludes that Dr. Harvey's work is a "triumphant refutation of the opposing views of Dr. Carpenter, and the distinction insisted on by the latter as existing between the seed and the bud, and of course between their respective produce. The practical applications of the theory—cautions as to pruning and the precautions as to planting, are valuable."

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The healthfulness of New Orleans is unimpaired. The bills of mortality give a low weekly aggregate.

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Of the character of Josiah Hale, M. D., lately deceased in this city, a notice has been promised for this Journal. So much science, worth, modesty, and suavity of manners, as were concentrated in Dr. Hale, seldom meet in the same individual.

## Editor's Office.—Notices.

JULY, 1856.

### NEW MEDICAL JOURNALS.

- The Louisville Review*, a Bi-Monthly Journal of Practical Medicine and Surgery: Edited by S. D. GROSS, M. D.; Professor of Surgery in the University of Louisville; and T. G. RICHARDSON, M. D., Demonstrator of Anatomy, &c.  
*Journal de Médecine de Bordeaux*:—Par. MM. Barbet, Bitot, Brocard, Costes, Gintrac, Jeannel, Oré, Rousset, and Venot. Rédacteur en Chef: M. Costes. Monthly. (*In exchange*.)

### BOOKS AND PAMPHLETS RECEIVED.

- Digestion and its Derangements; the Principles of Rational Medicine applied to Disorders of the Alimentary Canal.* By THOMAS K. CHAMBERS, M. D.; F. C. P.; Physician to St. Mary's Hospital; Lecturer on the Practice of Medicine at St. Mary's Hospital School, London; Author of "Decennium Pathologicum," &c. Pp. 441, 8vo. New York: Samuel S. & William Wood. 1856. From Mr. T. L. White, bookseller, 105 Canal-street, New Orleans.
- Headaches; their Causes and Cure.* By HENRY G. WRIGHT, M. D., M. R. C. L., Physician to the St. Pancras Royal Infirmary, &c. Pp. 140. 12mo. New York: Samuel S. & Wm. Wood. 1856. From the same.
- On the Organic Diseases and Functional Disorders of the Stomach.* By GEORGE BUDD, M. D.; F. R. S.; Professor of Medicine in King's College, London, &c. Pp. 283. 8vo. Samuel S. and Wm. Wood. New York. 1856. From the same: The same work, published by Blanchard and Lea. Phila. Pp. 252. 8vo. 1856. From Mr. J. C. Morgan, bookseller, Exchange-place, N. O. (Noticed in the March No. of this Jour., but omitted in the catalogue.)
- De la Fièvre Typhoïde dans ses Rapports avec la Phthisie.* Thèse pour le Doctorat en Médecine: Par J. J. C. ALFRED MERCIER, Docteur en Médecine. Pp. 30. 4to. Paris: 1855. From the author.
- Proceedings of the Convention and of the Medical Society of the State of California, held in Sacramento, March, 1856.* Pp. 25; with a circular, pp. 7.
- Thirteenth Annual Report of the New York State Lunatic Asylum. Official.* Pp. 48. Albany, N. Y. 1856.
- Remarks on Vesico-Vaginal Fistula, with an account of a new mode of Suture, and seven Successful Operations.* By N. BOZEMAN, M. D., of Montgomery, Ala. Pp. 26. Louisville: Hull & Brother, 1856.
- Cretins and Cretinism; a Prize Thesis.* By GEORGE S. BLACKIE, M. D., curator of the Botanical Society of Edinburgh. Pp. 70. Edinburgh: 1855. From the author.
- A Practical Treatise on the Diseases of the Testis, and of the Spermatie Cord and Scrotum; with numerous wood Engravings.* By T. B. CURLING, F. R. S., Surgeon to the London Hospital, Lecturer on Surgery at the London Medical College, President of the Hunterian Society, &c.; second American, from the second revised and enlarged English edition. Pp. 419. 8vo. Philadelphia: Blanchard and Lea. 1856. From Mr. J. C. Morgan, Bookseller, Exchange-place.
- On the Nature, Treatment, and Prevention of Pulmonary Consumption, and Incidentally of Scrofula, with a demonstration of the cause of the disease.* By HENRY M'CORMAC, M. D. Pp. 111. 12mo. London: 1855. From the author.
- Announcement of the New Orleans School of Medicine:* Pp. 8. New Orleans, 1856.
- Constitution of the Academy of Sciences of St. Louis, Mo.* Pp. 15. 1856.
- Transactions of the South Carolina Medical Association.* Pp. 55. Code of Ethics, Pp. 18. Charleston, S. C. 1856.
- The State of Medical Science in South America:* By C. W. BRINK, M. D. Pp. 16.
- Uncertainty of the Materia Medica:* By CHAS. W. BRINK, M. D. Pp. 22.
- Census of Boston, for 1855; with analytical and sanitary observations:* By JOSIAH CURTIS, M. D. Pp. 104. 8vo. Boston: 1856. From the author.
- Mutual Responsibilities of Physicians and the Community,* HENRY P. TAPPAN, D. D., LL. D. Chancellor of the university of Michigan. Detroit, Mich.: Pp. 25. 1856.
- History of the Ligature Applied to the Brachio-Cephalic Artery; Statistics of the operation.* By PAUL F. EVE, M. D. Nashville: Pp. 24. 1856.

*The Microscope, and its Revelations:* By WILLIAM B. Carpenter; M. D., F. R. S., F. G. S., examiner in Physiology and comparative anatomy in the University of London, Professor of Medical Jurisprudence in the University College; President of the Microscopical Society of London, etc.; with an Appendix containing the applications of Microscope to Clinical Medicine, etc.; By FRANCIS GURNEY SMITH, M. D., Professor of the Institutes of Medicine in the Medical Department of the Pennsylvania College, etc.; illustrated by 434 engravings on wood. Pp. 724. 8vo. Philadelphia: Blanchard and Lea. 1856. From Mr. T. L. White, Book Seller, 105 Canal St., N. O.

## TABLE OF CONTENTS.

### ORIGINAL COMMUNICATIONS.

	PAGE
ART. I.—On the Topography, Climate, and Diseases of Washington; Texas: by T. J. Heard, M. D. ....	1
ART. II.—Yellow Fever of 1855 at Pass Christian, Mississippi: by N. H. Calvert .....	8
ART. III.—Treatment of Typhoid Fever: by Joseph R. Smith, M. D., of Elyton, Ala. ....	9
ART. IV.—Healing Art <i>vs.</i> The Knife: by J. R. Freese, M. D., Bloomington, Ill. ....	12
ART. V.—Case of Twins, one being a Monstrosity, Uterine Hæmorrhage: by W. L. Gammage, M. D., of Rusk, Texas. ....	15
ART. VI.—Case of Abscess of the Liver: by James E. Smith, M. D., Pine Hill, Rusk Co., Texas. ....	17
ART. VII.—Diseases of the Liver: by Bennet Dowler, M. D. ....	22
ART. VIII.—Iodide of Quinine in Periodic Fevers, and in Scrofulous Subjects; translated from the <i>Revue Thérapeutique</i> ; with Remarks on the Intermittents of Louisiana: by M. Morton Dowler, M. D., N. O. ....	30
ART. IX.—Epilepsy .....	31

### PROGRESS OF MEDICINE.

ART. I.—Therapeutic Results in the Children's Hospital of Munich, under Professor Hauner. Reported in the <i>Journal f. Kinderkrankheiten</i> ; 1855. Translated from <i>l'Union Médicale</i> for March, 1856: by M. Morton Dowler, M. D., New Orleans. ....	35
ART. II.—Cholera transmitted from Man to the Fowl, by means of Choleraic Discharges, mixed with Food; by Dr. Charcellay; being Experiments made at the Ambulance of St. Etienne, by MM. Resnouseau and Homo, Heads of the Clinic, and Students of l'Hôpital Général of Tours. Read before the Société Médicale of the Department of Indre et Loire. Translated from the <i>Gazette Hebdomadaire</i> , April, 1856: by M. Morton Dowler, M. D., New Orleans. ....	43
ART. III.—Albumen: translated by B. Dowler, M. D., from the <i>Jour. de Méd. de Bordeaux</i> . ....	47
ART. IV.—Divers Formule for the Employment of the Ammonia, and the Ammoniacal Salts: translated from the French by M. Morton Dowler, M. D., New Orleans. ....	48
ART. V.—On the Preservation of Animal Matter by the Earthy Chlorides: by M. Barbet, Professor at the School of Medicine. Translated from the <i>Journal de Médecine de Bordeaux</i> , by M. Morton Dowler, M. D., New Orleans. ....	50
ART. VI.—The Sulpho-Cyanuret of Potassium, a constant and normal Constituent of the Saliva. Académie des Sciences. Sitting of March 16th, 1856. Translated from <i>l'Union Médicale</i> : by M. Morton Dowler, M. D., New Orleans. ....	53



# Table of Contents.

147

PAGE.

ART. VII.—Blood considered as an Aliment, and as a Remedy, Translated from the, <i>Thérapeutique</i> : by M. Morton Dowler, M. D., New Orleans ..	54
ART. VIII.—Viperine Inoculation not a Preventive of Yellow Fever: translated from <i>Gaz. Heb. de Méd., &amp;c.</i> , for April, 1856: by M. Morton Dowler, M. D.,.....	56
ART. IX.—Therapeutic application of Pepsin: translated from the <i>Journal de Méd. de Bordeaux</i> , March, 1856: by M. Morton Dowler, M. D.....	57
ART. X.—Leucothemia: by Dr. F. De Pury, of Neuchatel. Reported by Dr. Stroke. Translated from <i>l'Union Médicale</i> of April 17th, 1856: by M. Morton Dowler, M. D., New Orleans.....	57
ART. XI.—Perforation of the Appendix Vermiformis.....	64
ART. XII.—Simple and Puerperal Peritonitis.....	66
ART. XIII.—Treatment of Yellow Fever at Norfolk (Va.) during the Summer of 1855: by A. B. Williman, M. D.....	71
ART. XIV.—Treatment of Yellow Fever at New York.....	76
ART. XV.—Treatment of Typhus Fever: by Edwin R. Maxon, M. D., Geneva, N. Y.....	77
ART. XVI.—On Treatment of Intermittent Fever by Iodide of Potassium: by E. F. Sankey, Esq.....	78
ART. XVII.—On Myeloid and Myelo-Cystic Tumors of Bones: their Structure, Pathology, and Mode of Diagnosis. By Henry Gray, F. R. S....	79
ART. XVIII.—Melanosis.....	80
ART. XIX.—On the Absorbing Power of the Intestines in the algid stage of Cholera, by Dr. A. Hirsch, of Dantzic. Translated from the German, for the Observer, by Wm. Krause, M. D., of Cincinnati.....	82
ART. XX.—On the <i>Rottlera Tinctoria</i> , as an article of the <i>Materia Medica</i> . By Asst. Surg. Thomas Anderson, M. D., 43rd Regt. Light Infantry...	84

## REVIEWS.

REV. I.—Chambers on Digestion and its derangements.....	91
REV. II.—A Treatise on Medical Jurisprudence; by Francis Wharton, "Author of a Treatise on American Criminal Law," "Precedents of indictments," "American Law of Homicide," etc.; and Moreton Stillé, M. D., Lecturer, &c. <i>The case of Luigi Buranelli</i> : By F. Winslow, M. D.....	105
REV. III.—On the Nature, Treatment, and Prevention of Pulmonary Consumption, and Incidentally by Scrofula, with a Demonstration of the Cause of the Disease: By Henry M'Cormac, M. D.....	128
REV. IV.—The Causes and Curative Treatment of Sterility: By A. K. Gardner, A. M., M. D., &c. &c.,.....	133

## MISCELLANEA.

ART. I.—Gleanings,—Pharmaceutical, Chemical and Medical.....	136
ART. II.—Physicians and Pharmaceutists and their Relations: by J. M. Maisch.....	139
ART. III.—The Three Phases of a Surgeon's Professional Life.....	141
ART. IV.—Urinary Calculi in India.....	142
ART. V.—Puberty in the African Negro.....	142
ART. VI.—Alexis St. Martin.....	142
ART. VII.—Trees and their Nature.....	143

# THE NEW ORLEANS MEDICAL AND SURGICAL JOURNAL,

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- 3.—Add to the name, the profession, as M. D., Physician, Surgeon, Planter, &c.
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- 6.—Anonymous articles will generally be excluded. Reviewers will please to add their names or initials to their articles.
- 7.—Articles sent for the original department of this Journal must not have appeared in other Journals.
- 8.—Articles should be sent at least two months before the time at which their publication is expected.
- 9.—Articles, provisionally accepted, the publication of which is necessarily deferred, will be acknowledged in the next issue; all others may be considered as not accepted, and may be re-claimed within two months.
- 10.—The acceptance of articles for this Journal must not be construed by the reader as implying the approval or disapproval by the Editor; he will not accept any article which he has sufficient reason for believing to be false in fact, immoral in import, or injurious to the public and the profession. Articles valuable for their facts, though defective in orthography and style, will be considered, revised and arranged for publication in strict accordance with the writer's views, without the Editor assuming the responsibility of either the facts or opinions which may be advanced on any occasion.
- 11.—Papers of moderate length, having a practical bearing, will be preferred.—[EDITOR.]

# ST. LOUIS MEDICAL COLLEGE.

The Regular Lectures in this Institution will commence on the first day of November, 1856, and continue until March. A preliminary Course at the College, as also Clinical Lectures at the Hospital and the Dispensary, will be delivered without extra charge, during the month of October.

M. L. LINTON, M. D., Professor of the Principles and the Practice of Medicine.

A. LITTON, M. D., Professor of Chemistry and Pharmacy.

CHARLES A. POPE, M. D., Professor of the principles and the Practice of Surgery and Clinical Surgery.

M. M. Pallen, M. D., Professor of Obstetrics and Diseases of Women and Children.

W. M. McPHEETERS, M. D., Professor of Materia Medica Therapeutics.

CHARLES W. STEVENS, M. D., Professor of General, Descriptive, and Surgical Anatomy.

JOHN B. JOHNSON, M. D., Professor of Clinical Medicine and Pathological Anatomy.

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July, 1856. 1—2t.—13.

CHARLES A. POPE, M. D., Dean

## UNIVERSITY OF NASHVILLE. MEDICAL DEPARTMENT.

SESSION 1856—57.

THE SIXTH ANNUAL COURSE of Lectures in this Institution will commence on Monday, 3d of November next, and continue till the first of the ensuing March.

PAUL F. EVE, M. D., Professor of Principles and Practice of Surgery.

JOHN M. WATSON, M. D., Professor of Obstetrics and the Diseases of Women and Children.

W. K. BOWLING, M. D., Professor of Institutes and Practice of Medicine.

A. H. BUCHANAN, M. D., Professor of Surgical Anatomy and Physiology.

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The Anatomical Rooms will be opened for students on the 1st Monday of October.

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Nashville, June, 1856. 1—1t.—13.



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**TABLEAU**


OF THE

**YELLOW FEVER OF 1853.**

*With Topographical, Chronological and Historical Sketches of the Epidemics of New Orleans since their origin in 1796, illustrative of the Quarantine Question.*

**BY BENNET DOWLER, M. D.**

New Orleans: 1854. 66 large octavo pages. Price—50 Cents per copy; three copies for \$1; 100 copies for \$25.

 Orders should be directed to Delta Office, 76 Camp-street, New Orleans.

The editor of this journal considers this pamphlet the best that has been written on the subject. It contains much valuable matter in a small compass, and adds to the many laurels already won by the indefatigable author in this and other branches of investigation. His last chapter, while it has all the vigor and truthfulness of the poet, introduces us to the bedside of the dying and the dead—goes beyond the usual boundaries of observation, and brings back a wreath to crown the altar of Science, from a region too sterile for the poet, and even for the less energetic philosopher.—[*Phil. Med. and Surg. Jour.*]

In the sixty-six pages, of which this pamphlet consists, Dr. Dowler has contrived to condense more matter of an important and instructive character, bearing directly upon the etiology and character of Yellow Fever, than would suffice, if fully developed and examined in all its relations, to fill a goodly sized volume of several hundred pages; and that, too, without any undue extension of subject or prolixity of style.—[*The American Journal of the Medical Sciences.*]

# PENNSYLVANIA COLLEGE--MEDICAL DEPARTMENT.

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## SESSION OF 1856--57.

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The regular course of lectures will commence on Monday, October 13th, and will be continued to the first of March.

### FACULTY.

DAVID GILBERT, M. D.,	{ Prof. of Obstetrics and Diseases of Women and Children.
ALFRED STILLÉ, M. D.,	Prof. of theory & practice of Medicine.
JOHN NEILL, M. D.,	Prof. of Surgery.
J. M. ALLEN, M. D.,	Prof. of Special & Surgical Anatomy.
JOHN J. REESE, M. D.,	Prof. of Medical Chemistry.
JOHN. B. BIDDLE, M. D.,	Prof. of Therapeutics & Materia Medica.
FRANCIS G. SMITH, M. D.,	Prof. of Institutes of Medicine.

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H. W. DESAUSSEURE FORD, Demonstrator of Anatomy.

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Clinical Instruction will be given by Professors BIDDLE and NEILL at the PHILADELPHIA HOSPITAL, BLOCKLEY, during the entire term of the session, in conjunction with other members of the Medical Board of the Hospital. The Students of Pennsylvania College—both FIRST COURSE and SECOND COURSE—will be furnished GRATUITOUSLY with the ticket to the Philadelphia Hospital. Second course Students have the option of receiving gratuitously the ticket to the Pennsylvania Hospital. A Clinic will also be held at the College every Wednesday and Saturday morning throughout the session.

FEES.—For the entire Course of Lectures.....	\$105 00
Matriculation, (paid once only,).....	5 00
Graduation,.....	30 00

The Dissecting Rooms will be opened in September, under the direction of the Professor of Anatomy, and the Demonstrator.

Preliminary Lectures will be delivered during the fortnight preceding the opening of the session.

JOHN J. REESE, M. D., REGISTRAR.



THE NEW ORLEANS  
MEDICAL AND SURGICAL JOURNAL  
FOR SEPTEMBER, 1856.

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ORIGINAL COMMUNICATIONS.

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ART. I.—*Hæmorrhage from the extraction of a Tooth*; by M. MORTON DOWLER, M.D.

APRIL 18th, 1856. I was called up this morning at two o'clock, to visit Mrs. M., a widow, *æt.* 20, suffering from profuse hæmorrhage issuing from the socket of a tooth, which had been drawn the day previous by a dentist. At the same sitting, she had in all, four carious teeth extracted. The last drawn, and the one which has given rise to the hæmorrhage, is the left inferior wisdom tooth, the socket of which has continued to bleed ever since; the flow becoming much more copious during the last few hours. A basin at the bedside contained more than three pints of blood, which was only a portion of the amount lost since the extraction. Patient—nervous temperament, delicate health, laboring under anæmia, apparently from the effects of previous attacks of intermittent fever. Owing to want of activity in the digestive organs, she is subject to depressing "sick head-aches," and to flatulence and constipation.

Taking a plug of lint, (after sponging the socket,) and rolling it in moistened tannic acid, I passed it into the cavity, and fitted on it a delicately graduated compress, and drew the jaws strongly together with a cravat. By this means the hæmorrhage was arrested till about eight o'clock in the morning, when the blood re-appeared and the mouth was flooded with hæmorrhage. On examining the socket in the sun's rays, the blood appeared to issue from every point of the bone in the vacated alveolus. I resorted at once to the actual cautery, providing myself for this purpose, with two wires, the tip ends of which were bent

at right angles; one wire being about the size of a crow-quill, and the other the size of a common knitting needle. Taking hold of the smaller one at a red heat, and waiting till the redness faded away, I cauterized, at several applications, the depths of the fang-sockets. The larger wire, at the same temperature, having its end smoothed, and somewhat increased in area, was passed over the general surface of the alveolus. The latter now presented a blackened and coagulated aspect, and the blood ceasing to flow, a plug and compress were applied as before, and the jaws lightly bandaged. With this procedure I hoped there would have been no further effusion of blood, and such appeared to be the prospect for the five days next succeeding. The patient who had become very feeble, was put on a nourishing fluid diet; and circumspection was enjoined with regard to disturbing the socket. At the end of five days, however, the mouth was again suddenly filled with blood, and on visiting the patient, I found her greatly exhausted. I had recourse again to the actual cautery, which unlike the first application, gave the patient considerable pain. I applied the two wires as before, taking care to cauterize, not only the depth of the fang-sockets, but the whole surface of the bleeding alveolus, resorting again to light compression, and enjoining the former precautions. For six days the case went on favorably, when the hæmorrhage suddenly became as profuse as ever. I was much disappointed and chagrined at this result, having on two former occasions arrested severe hæmorrhage of the alveolus at once by the actual cautery. Sponging out the socket, I introduced a plug of lint dripping with the styptic liquor of Pravaz,—the perchloride of iron,—and pressing it firmly into the socket, and placing a graduated compress on the same, I firmly drew the jaws together with a cravat. This was the twelfth day of the hæmorrhage, and I was by no means sanguine of success by this latter procedure. On the third day after—the fifteenth day of the hæmorrhage, fresh blood again appearing, I withdrew the compress, and treated the socket freely with the perchloride of iron as before. I ordered the patient eight drops of the styptic, three times a day, to be swallowed in a table spoonful of sweetened water. There was after this date no further loss of blood. The compress was removed at the end of five days, the plug being allowed to remain for six days afterwards. The socket now, (June 1st), is completely healed. The patient, however, has an extremely anæmic appearance, and is undergoing treatment with the bark and the acetate of iron. In view of this case, I am led to infer that the protracted hæmorrhage was not *solely* owing to a local vascular peculiarity of the socket, but that the loss of blood was greatly influenced

by the general condition of the organism, as the extraction of the other teeth gave rise to much more than the ordinary discharge of blood.

The agents which have from time to time been proposed as hæmostatics at the hands of both empiricism and science are numerous. It has been unfortunately found, however, that in all serious emergencies, they have all proven either wholly useless or of very limited reliability. I have reason to believe however, that the liquid neutral perchloride of iron, is an agent of extraordinary power in this respect, and that it is deserving to be placed at the very head of the lists, both as a local and and general hæmostatic remedy. I first used this remedy in August last on the recommendation of Dr. A. Mercier, the distinguished surgeon and Physician of this city, in a state of obstinate slow and protracted metrorrhagia, to which I called him in consultation. The patient—ten years married—childless for the last four years; catamenia rarely regular, and generally leucorrhœa in the intermediate periods. At times she has gone for six weeks without any menstrual show, which would be followed by a sanguineous oozing for two or three weeks. At the time of consultation, patient had been for the six weeks next preceeding, affected with almost constant metrorrhagia, the effusion being generally slow but sometimes tolerably free; bowels constipated tympanitic with considerable uterine and abdominal tenderness, frequent uterine pains with flashes of fevers and clammy sweats, insomnia, and loss of appetite. I have designated the disease by the name of *Metrorrhagia*; though from careful digital and metroscopic examination, I consider the case to have been a real leucorrhœa, rendered sanguineous by the excessive epithelial denudation of the os and canal of the cervix uteri, and granular softening and sponginess of the same. At the suggestion of Dr. Mercier, I resorted to the perchloride of iron, in the proportion of one drachm to the ounce of distilled water. The os uteri being exposed by the application of the metroscope, a small straight silver catheter closed at the end, and furnished with numerous side holes, was passed through the os into the uterus, and by means of a penis-syringe of glass, the liquid was freely injected, three times a day. Dr. Mercier saw the patient daily for several days. All discharge of whatever kind speedily disappeared. At the end of five days the injections were practised twice a day only, and we discontinued at the end of twelve days. The patient took a few drops of the medicine three times a day by the mouth, towards the close of the treatment. The cure was complete; and the patient has been free from leucorrhœa and has regularly menstruated ever since. I have subsequently cured two obstinate cases of sanguinolent uterine



leucorrhœa by the same means. The local alterative effect of the perchloride appeared to be very remarkable.

In a hæmorrhagic case of yellow fever occurring last year on the levee, in this city, I administered the perchloride of iron freely, internally, with a view to its hæmostetstatic effect. The case was that of a young German woman who was losing blood in an alarming manner from the gums and schneiderian membrane. It did not however appear to have the least influence over the hæmorrhage, and the patient appeared, as it were, to bleed to death.

Fatal cases of hæmorrhage resulting from the extraction of teeth have been occasionally recorded. Even where there is no absolute hæmorrhagic diathesis, troublesome and even fatal hæmorrhage is not impossible; and where such diathesis is present and predominant, everything, including the perchloride of iron, and the actual cautery may be considered as likely to prove unavailing.



ART II.—*On the Solution of the Sulphate of Morphia in Aq. Camphoræ:* by C. C. HOWARD, M.D., of Lowndesboro, Ala.

IN Vol. XI, No. 11 of the Southern Medical and Surgical Journal, in writing on dysentery, I took occasion to mention a special combination of two of the most valuable remedies of the *Materia Medica*, viz: Morphia and Camphor.

Having further tested the advantages of this combination, and not finding the formula in any of the books examined, I desire to make an effort to bring it more prominently before the profession; not as a remedy in dysentery only, but in almost any case where a *neat, convenient, safe, and efficient anodyne* is required. The combination may be in more general use than I suppose, but certainly not so much so as it might be to advantage.

'Hope's mixture,' which may have suggested it in dysentery, is a valuable remedy; but the laudanum in it is very inferior to the morphia and the acid, occasionally at least, defeats the object. Other forms of opium and camphor usually act well; but not unfrequently opium or laudanum will offend an irritable stomach which morphia would soothe.

I have found no remedy equal to the morphia and camphor, in relieving uterine pains, especially those of dysmenorrhœa and after pains. But it is unnecessary to specify—suffice it to add, that this combination affords an admirable remedy; the formula for which ought to have an

insertion in every Medical Journal, and a place in every Medical Formulary that may be published. It is usually prescribed thus:—*R.* Sulph. Morphia grs. ij; Aq. Camphoræ 3 vj. Dose:—A table spoonful at intervals of one, two, or four hours, *as occasion requires.*

Of course it should be kept in mind that “Sulphate of Morphia as found in the shops, is not always entirely soluble in water.”

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ART. III.—*Refrigeration in ardent Fevers*; by BENNET DOWLER, M.D.

THE little estimation in which refrigeration (by means of ventilation and cold applications) is held, cannot readily be explained, seeing that this is one of the very few instances in which physiology and physics alike contribute to illustrate therapeutics, approximating in fact, the achievement of the great desideratum so often sought but never found, namely, a knowledge of the necessary connection, relation, and adaptation of cause and effect in the sense of final causes. The various explanations of the curative action of medicines are really but provisional assumptions, or the enunciation of the constant or frequent occurrence of definite phenomena which have been observed, in which no necessary connection or fitness can be perceived beyond the order, the succession and the universality of the phenomena themselves.

Refrigeration when successfully effectuated in the hot stage of fever, is not explicable in the nature of a clearly perceived necessary relation as cause and effect. The connection between a remedy and the cure of a disease, is not perceived to be, in a single instance, a necessity. A frequent or constant therapeutical event or result, is phenomenal or experimental, not a result determinable *à priori*—a result, the fitness and necessity of which are neither accounted for, nor solved by synthetical judgements nor by intuition.

A synthetic view of the phenomena of fever clearly reveals a morbid or increased heat either internally or externally as its most essential character. A rational synthesis indicates refrigeration as a grand therapeutic means, which, however, like every other means of cure must be carefully adapted to the varying condition of the sick, not being a panacea.

Refrigeration harmonizes with most theories of the treatment of fever—with solidism—with humoralism—with the local origin—with the constitutional origin of febrile maladies—in all of which, whether

primary or secondary, free caloric must act mechanically, chemically, morbidly, and fatally as is well known from experiments upon animals in which it proves fatal, when augmented from  $10^{\circ}$  to  $15^{\circ}$  beyond the normal standard. The animal metamorphoses, decompositions, recompositions, and the many altogether new changes which the organism must undergo from such an all pervading and all-powerful agent, are great, paramount, and, even in a physical point of view, comprehensible. Every tissue, every atom, every normal chemical combination, whether gaseous, liquid or solid, must be presumed to undergo deleterious alterations from a great morbid heat.

Normal physiology, and physics too, indicate the great principle of refrigeration beyond mistake, and an enlightened pathological physiology must accept it as fundamental in the therapeutics of maladies which are characterized by an unnaturally high temperature, as ardent fevers, &c. Many of the phenomena attendant upon these maladies, as they progress when left wholly to nature, together with most of the remedies applied by art, combine to prove that the removal of morbid heat is a grand desideratum. Many curative means which fallacious theories have placed in contrast as stimulant and contra-stimulant—phlogistic and antiphlogistic, tonic and debilitant—cooling and heating—act not according to the theory of the physician, but analogically and perhaps even identically proving febrifuge by their refrigerating tendency, though by apparently different routes. Thus spirits and vinegar, applied warm by sponging to the hot skin, will to a considerable, if not to an equal extent with cold, produce refrigeration by the active evaporation from the surface. Even a draught of hot brandy, laudanum and quinine may produce as its finality, a relaxation of the skin, copious perspirations, and a lowering of the heat.

The therapeutic theory of Thompson—if such nonsense may be called a theory, is, in his own words, as follows: “Fever takes its rise from one cause; one method of removing that cause will answer in all cases, that is *heat*.” The United States Government—which may Heaven forgive! granted Thompson letters patent for the administration of Lobelia, which was his principal article and which was previously known for a long time to the regular Faculty. He also used steam, (a purer and better article than the steam of the patient’s body, inclosed in bed clothes, so much relied on by some in New Orleans). Now Lobelia, or its infusion, or the Indian tobacco powder produces violent vomiting, prolonged nausea, and profuse perspirations which diminish the animal heat both physiologically and physically. The evil effects of hot steam would be almost entirely neutralized by abundant sweat. Thus,



this most celebrated of modern empirics, who gave all his remedies "to raise as great an internal heat as he could," so far from heating the body as he thought, often cooled it below the normal standard, by powerful and even fatal emetics, nauseants, &c.; and, although frequently tried for murder, he always escaped for want of proof of malicious intent.

Hence, physicians sometimes "produce their best cures when they treat diseases without being guided by, or even contrary to their theories."

Even as to cold and hot drinks, how much soever one might be preferable or more pleasant as compared to the other, it does follow that their curative actions and effects, if any, are necessarily antithetic. A gallon of warm ptisans and a like quantity of iced water taken in twenty four hours might in either case cause perspiration, dissolve, dilute and discharge by some emunctory as the skin, bowels, or kidneys, offensive or deleterious matters from the bowels or from the blood, which may have caused or aggravated the disease. It does not follow that a blood-letting, a nauseant, a diuretic, a diaphoretic powder, a purgative or an enema acts in a manner fundamentally different, essentially divergent, from a gallon of iced lemonade, or a gallon of warm ptisans. Perpetually varying circumstances require skill to detect them, and thus enable the physician to choose the remedy the best adapted to each condition. He might sometimes find that a dose of calomel would be better than ptisan; such a dose by nauseating, by acting upon the liver and glands, and finally on the alimentary canal, would sweat, purge, lower the morbid heat, &c., more effectually than any other single remedy, whether stimulant or antiphlogistic, without being antagonistic to either under all circumstances.

It is well known that a high humid heat is far more oppressive, mendurable, and irrespirable than a dry one of the same temperature. A man immersed in boiling water and in water even at a temperature much below that, is instantly killed, though a dry air heated two or three times hotter has been frequently borne for many minutes without injury. Steam of a high temperature like hot water is injurious, fatal. The hot steam of perspiration confined around the body by blankets is more pernicious than ordinary steam of the same temperature inasmuch as it is loaded with a most deleterious gas, namely, carbonic acid—a cutaneous excretion thrown off from millions of pores. That carbonic acid gas is eliminated from the skin, has been proved by direct experiment, by inclosing a limb in an air-tight vessel.

It must be observed that this hot steam or air saturated with humidity and deleterious gases confined around the body, prevents the

aëration or oxydation of the blood, which, to some extent is carried on by this tissue (the cutaneous) as in some of the inferior animals. An impermeable varnish placed on the skin soon proves fatal to animals, as proved by many experiments. Air, garments, sheets, and blankets saturated with humidity, and confined around the body, so far from increasing, diminish, and would wholly stop perspiration, or evaporation just as in the case of an impermeable varnish, were the saturation and confinement of the air complete. The illusory appearance of wet garments as indicants of abundant perspiration, misleads the unscientific observer. These garments once wet would be always wet were the air wholly excluded. A free current renders perspiration invisible though not the less real for that reason. Sensible perspiration thus becomes insensible, passing off unseen in vapor. Dry garments, and warm, dry, free air may lessen apparent, not real perspiration.

In his work on "the influence of Physical agents," Dr. W. F. Edwards, many years ago asked, and answered the question—"is perspiration susceptible of being suppressed," thus: "We can then in no case suppress perspiration; it will be performed either by evaporation or by transudation. We ought therefore to be careful how to take literally what we find in medical books respecting suppressed perspiration. There can be no such thing. That there may be suppression of sweat, is evident to any one; but it does not follow that even in these cases there is no transudation."

The fundamental idea, in the popular mind, that sweat and wet—perspiration and water, are synonymous terms, is a fallacy which the medical profession should not countenance.

Dr. Brink in his pamphlet on the state of medical science in South America, says:—

"In regard to the climate of Chili, there is no country in the world more remarkable for the dryness of its atmosphere—indeed, those who do not know that perspiration passes off insensibly, say that in Chili persons never sweat. It was so asserted, some years ago, by an intelligent German traveller, and is often repeated by the natives. This peculiarity of the climate of Chili, and the humidity of the Pacific side of the Andes north of the desert of Atacama—a peculiarity also equally remarkable in the inland forest regions, very materially modifies the operation of two extensive classes of remedies, viz., Diaphoretics and Diuretics, and illustrates the importance of designating (as Hippocrates did) the place in which opinions are written, before we accept or reject them."

Now it is probable that these apparently non-sweating individuals of Chili, would in the humid climates east of the Andes, or in New Orleans, sweat less though they might drip with moisture.

I cut out of MS. volume XV, the following note in relation to a very curious fact which I did not witness, but which I doubt not was correctly reported: March 18, 1846. I learned to day from Dr. McManus of Professor Stone's Hospital, that a man who had formerly been treated for an extensive superficial burn of the lower half of the body, is incapable of sweating in that part of his body. This causes the man to suffer much since his recovery from the burn, especially in hot weather. He obtains no relief except from the immersion of the parts in cold water. Have not the sudoriparous gland-ducts which open through the epidermis (the channels of perspiration) been destroyed or closed by the firm cicatrization caused by the burn, as if the skin had been coated by impermeable varnish?

The artificial application of heat may increase sensible perspiration; but the hot, forced sweat, thus excited, as it is sometimes in yellow fever, which, in the early stage is one of the hottest diseases known, is generally mischievous, often resembling that malignant form of yellow fever in which the patient from the first hour of his disease until his death, is bathed in a hot perspiration, the heat declining but little even *in articulo mortis*. For, although, the general tendency of perspiration be refrigeratory and curative in yellow fever, yet heating measures to excite it, during the hot stage of the disease, augments the danger upon the whole. The forced sweating not neutralizing the new element of mischief introduced and combined with the pre-existing preternatural temperature inherent in the malady itself. In these persistent hot cases of yellow fever, Nature generally sets up the sweating and evaporating process which is favored upon physical principles by free ventilation in warm, dry, lively currents of air, unless the body be almost hermetically sealed in blankets, non-conductors of heat.

Among the most efficacious of all remedies for the treatment of the early and middle stages of ardent fevers, are, free aerial currents and cold water. The application of these remedies, of course, requires skill and discrimination, yet owing to their cheapness, simplicity, pleasantness, to prejudice or some other cause, they are not only very often repudiated but very opposite methods and agents are substituted in the treatment of febrile maladies.

In New Orleans the refrigeratory treatment is underrated, not a few patients being treated by other means, chiefly in yellow fever, as hot mustard baths; warm drinks; blankets tucked around the body to exclude the air; closed windows, &c. This practice, which it appears, originated with a portion of the Medical Faculty, has, during the late epidemics in New Orleans, taken a deep hold upon the minds of many,



insomuch that the writer has in his own practice, in some instances been unable to carry into effect a better mode of treatment even in the hot stage of yellow fever. In fact, he has found patients willing to take any drug he might prescribe—who, nevertheless refused to change their wet body linen and sheets for a week—who wrapped themselves in blankets, who hurriedly put out their wrists in order that their pulses might be felt, returning the same quickly under cover lest the sweating should stop—who, instigated and advised by their deluded friends, allowed no windows to be opened, nor cold spongings to be applied to the skin, nor iced drinks to be taken. Candor obliges me to say, that a fair proportion of patients thus refractory as it respects purity of air, light covering, sponging, &c., recovered nevertheless.

In the wards of a crowded hospital, having patients in all stages of fever, from the hot stage of inception, to the cold stage of collapse, and particularly in variable, cold, damp and windy weather, it is not always safe to allow full ventilation, nor is it possible to graduate the aerial currents to suit every case of morbid temperature, whether in the vigorous constitution or in the feeble and prostrate—in the hot stages of yellow fever, typhus, remittent, scarlatina, &c., or in the cold stage of congestive, cholera, intermittent, &c., including the convalescent, and the sinking conditions, the cold and clammy surface of impending death. Here, the private bedroom is, or might be far more advantageous, were rational medicine predominant over false theory. The same rules apply as to the kind and quantity of bed-clothes, non-conducting blankets for one, a heat-conducting linen sheet for another.

Nature, instinct, and feeling are not always wrong. Nothing but a hope or belief that heavy coverings of blankets or of feathers are necessary to the patient's cure, reconciles him to bear them during the hot stage of fever. Animals when over-heated seek the open air, often plunging into the water in order to get clear of the surplus heat.

In some instances, however, when the physician is prejudiced against ventilation, but not against cold beverages, the latter serve to lessen the increased heat from excessive coverings, and the absence of free ventilation, by their refrigerant action in the centres and by their secondary action in the form of both sensible and insensible perspiration or transpiration from the surface. Nature is great, and seeks to compensate herself on many occasions in the sick room, in despite of false theories and bad therapeutics.

The impure air originating from dense masses of human beings, whether in palaces, jails, ships, or camps, is, when not removed by ventilation, known to be the antecedent, or cause of typhus fever, &c., and,

how it can be dispensed with, or substituted by drugs, its opponents have not explained. Exclude all air from a room and its inmates must inevitably die, with a rapidity proportioned to the area, and the number of individuals, just as in the case of the men confined in the Black Hole of Calcutta.

Epithelial cells are thrown off both in sickness and health, along with the sweat. Experimenters find that both carbonic and nitrogen gases are parted from the system through the skin by the sudoriparous glands. And, it is highly probable that the poisonous agents, the *materia morbi* of diseases, are, for the most part, eliminated from the skin in the form of sweats, gases, odors, eruptions, &c

The air in the shade, always cooler than the patient's body during the hot stage of fever, being often in the hot part of a summer-day  $20^{\circ}$  or  $30^{\circ}$  less, will on passing over the body carry away a portion of the heat, and the more so, as the motion of air is increased. Such air with or without cold affusions is not only refrigeratory, but at once convenient to the physician, and the nurse, and agreeable to the sick.

In ordinary health, breezes or free ventilation is, in hot weather, cooling and invigorating; while hot stagnant air, saturated with humidity, produces, lassitude, debility, exhaustion, 'sleeplessness, inappetency, indisposition, and even sudden death, as witnessed in sun-stroke.

The internal and external therapeutic efficacy of refrigerants in morbid augmentations of animal heat, coincides with, and derives support from the analogies of physics throughout the organic and inorganic departments of Nature, in instances too numerous for enumeration.

Evaporation, the great precursor or rather cause of refrigeration, is, as already indicated the most active from the surface when the latter is not sealed up in a humid, confined air, previously saturated with moisture. In this state evaporation, if not absolutely prevented, is lessened, and the sweat drips down the surface; but on the contrary, the freer and drier the air having access to the body, the more will the patient be cooled by exhalation or discharge from the skin, and the less will be seen in the form of drops and wet garments. In such an air the sweat-drops dry up with corresponding celerity, while this process, namely, evaporation upon physical principles produces direct refrigeration. In this way a shower in hot weather when the air is not saturated with humidity, cools the pavements, houses, air, &c. In the same way æther which evaporates quickly, when dropped on the skin, will, it is said, produce congelation in the hottest weather simply by the refrigerating power of rapid evaporation. A patient in the second or third story of a house, other things being equal, will discharge more from the skin by evaporation, than one on the ground floor.

Since the above pages were sent to the printer, the following passage in Curre's Medical Reports,\* was noticed. It goes further than what has been previously advanced in this paper, as it regards the cooling effects of tepid water, &c. Dr. Currie, in his account of affusion and sponging with tepid water and vinegar, in feverish disorders having a low temperature, says :

"At first I imagined that the tepid affusion might be beneficial in cases where the heat of the body is below the degree necessary to render the cold affusion safe. I employed it therefore in those stages of fever where the heat did not exceed the temperature of health. A little experience however convinced me that this practice required strict attention, for I found, that in many cases, at least, the heat of the living body is lowered as speedily by the affusion of tepid water, as by the affusion of water that is cold: if I mistake not, in some cases the heat is lowered more speedily by the tepid water. To those who reason respecting the heating and cooling of the living body in the same manner as respecting inanimate matter, this observation will appear paradoxical; I assert it however from actual observation, and a little reflection will explain the phenomenon. The evaporation from the surface is more copious from the tepid affusion, and on this the cooling of the body very much depends. But this is not all; the tepid affusion is little if at all stimulating, and does not, like the cold affusion, rouse the system to those actions by which heat is evolved, and the effects of external cold are resisted. Where the object is to diminish the heat, that may be obtained with great certainty by the repeated use of the tepid affusion, suffering the surface of the body to be exposed in the interval to the external air—and if the beams of the sun are excluded, and a stream of wind blows over it, the heat may thus be reduced where cold water cannot be procured; even in the warmest regions of the earth—on the plains of Bengal, or the sands of Arabia. I have accordingly employed the tepid affusion very generally in those feverish affections where the morbid actions are weakly associated, depending rather on the stimulus of preternatural heat, than on contagion, miasmata, the morbid contents of the stomach and bowels, or local inflammatory affections of this kind are a great part of the feverish affections of children, in which the tepid affusion is a valuable remedy. It very generally produces a considerable diminution of heat, a diminished frequency to the pulse and respiration, and a tendency to repose and sleep. I have used it also in the feverish disorders of various kinds where the lungs are oppressed, and the respiration laborious, and where of course the oppression might be dangerously augmented by the sudden stimulus of the cold affusion. It is also applicable to every case of fever in which the cold affusion is recommended, and those may receive much benefit from it, whose fears or whose feebleness deter them from that energetic remedy. I have not however found its effects so permanent as those of the cold affusion, and I have never seen it followed by the total cessation of regular fever, as often occurs after the cold affusion."

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\* Philadelphia, 1808,



Tepid, though less refrigerant than cold sponging, differs essentially from the tepid or hot bath, in which latter, evaporation is prevented during the immersion. Indeed, I have found that the immersion of the feet and legs in hot mustard foot baths during the hot stage of yellow fever, communicated additional free caloric to the entire system at all accessible points. Rationalists ought to explain in what way they expect to cure their patients, already  $8^{\circ}$  or  $10^{\circ}$  too hot, by positively charging their bodies with additional free caloric. It is true, that recoveries take place under all modes of treatment, the least rational not excepted. Since the origin of medicine, superior success has always been claimed for every method practised by its advocates. A method is, however, somewhat suspicious, when its mode of curation is contradicted directly by physics, as well as by therapeutic analogies.

The Medico-Chirurgical Review, (April, 1847,) in a notice of a work by Dr. Mayo, (Clinical Facts, &c.,) expresses a favorable opinion of the efficacy of cold affusion in scarlatina maligna, adding, that "the neglect which Dr. Currie's discovery has met with, is infinitely discreditable to the medical science of England."

I have experimented for a long time upon animal heat in the healthy, diseased, and dead body, as the readers of this and other journals may, perhaps, know, as a portion of these experiments have been published. I do not wish to dwell on them now. The general principle of Dr. Currie as to affusions in ardent fevers, I had known, but had not seen his Reports until a comparatively recent period. His physiological experiments upon the body in health, though far more limited than mine, were made by a different route. A brief analysis of these experiments, will, doubtlessly be acceptable to the readers of this Journal, as will also, a synopsis of his clinical applications of cold and tepid water in scarlatina.

I. Edwards, aged 28, put into 170 gals., salt water at  $44^{\circ}$ ; air the same; his heat before immersion,  $98^{\circ}$  under the tongue; remained motionless in the water,  $1\frac{1}{2}$  minutes; fell in  $1\frac{1}{2}m.$  to  $87^{\circ}$ ; in  $12m.$ , rose to  $93\frac{1}{2}^{\circ}$ ; left the bath; exposed, naked in the open air for  $1m.$ , while being rubbed dry the mercury fell to  $87^{\circ}$ ; was then put into a warm bed; tongue  $87^{\circ}$ ; axilla  $89^{\circ}$ . In three hours he had not regained his heat.

II. Same man, &c., next day; pulse 85; heat  $100^{\circ}$ ; air and water  $44^{\circ}$ ; two  $m.$ , after immersion  $89\frac{1}{2}^{\circ}$ ;  $3m.$   $90\frac{1}{2}^{\circ}$ ;  $4m.$   $92\frac{1}{2}^{\circ}$ ;  $5m.$   $94\frac{1}{2}^{\circ}$ ;  $6m.$   $95^{\circ}$ ;  $7m.$   $95\frac{3}{4}^{\circ}$ ;  $8m.$   $95\frac{3}{4}^{\circ}$ ;  $9m.$   $95\frac{1}{2}^{\circ}$ ;  $10m.$   $94\frac{1}{2}^{\circ}$ ;  $11m.$   $95^{\circ}$ ;  $12m.$   $95^{\circ}$ ;  $13m.$   $95\frac{3}{4}^{\circ}$ ;  $14m.$   $95^{\circ}$ ;—taken out exposed naked,  $3m.$   $88^{\circ}$ ; took ale and went into a warm bed; in  $3m.$   $93^{\circ}$ ;  $1h.$   $95^{\circ}$ .

III. Next day, same man, &c.; heat  $98^{\circ}$ ; pulse 100; air and water each  $44^{\circ}$ —2m.  $88^{\circ}$ ; 3m.  $88^{\circ}$ ; 4m.  $88\frac{1}{2}^{\circ}$ ; 5m.  $90\frac{1}{2}^{\circ}$ ; 6m.  $92^{\circ}$ ; 7m.  $92^{\circ}$ ; 8m.  $94^{\circ}$ ; each m.  $94^{\circ}$ ,  $94^{\circ}$ ,  $94\frac{1}{2}^{\circ}$ ,  $94\frac{3}{4}^{\circ}$ ,  $95^{\circ}$ ,  $96^{\circ}$ ,  $96^{\circ}$ ,  $96^{\circ}$ ,  $96^{\circ}$ ; taken out 3m.  $90^{\circ}$ ; now put into a fresh water bath at  $97\frac{1}{2}^{\circ}$ ; 1m. after immersion  $88^{\circ}$ ; each m.  $92^{\circ}$ ,  $92^{\circ}$ ,  $94^{\circ}$ ,  $94^{\circ}$ ,  $96^{\circ}$ ,  $96^{\circ}$ ,  $96^{\circ}$ ,  $96^{\circ}$ .

IV. Same man, &c., heat  $97\frac{1}{2}^{\circ}$ ; water  $42^{\circ}$ ; by m.  $90^{\circ}$ ,  $92^{\circ}$ ,  $92^{\circ}$ ,  $92\frac{1}{4}^{\circ}$ ,  $92^{\circ}$ ,  $92\frac{1}{2}^{\circ}$ ,  $94^{\circ}$ , and from 8m. to 11m.  $94^{\circ}$ —12 to 14m.  $94\frac{1}{2}^{\circ}$ ; 15 to 24m.  $94\frac{1}{2}^{\circ}$ ; 25 to 28m.  $94\frac{1}{2}^{\circ}$ ; 29 to 30m.  $94^{\circ}$ ; on coming out fell  $5^{\circ}$  to  $6^{\circ}$  lower; warm bath gradually heated to  $104^{\circ}$ , in half a minute screamed with pain—"his shivering amounting almost to a convulsion;" the bath was lowered to  $88^{\circ}$ , and then increased to  $100^{\circ}$ —shivered still—heat about  $90^{\circ}$ —a bladder of hot water over the stomach, in the bath stopped his shiverings instantaneously; heat rose rapidly to  $98^{\circ}$ .

V. R. Sutton, aged 19, circumstances the same; heat  $96\frac{1}{2}^{\circ}$  after immersion, (bath  $42^{\circ}$ )  $\frac{1}{2}$ m.  $92^{\circ}$ ; each m.  $90^{\circ}$ ,  $88\frac{1}{2}^{\circ}$ ,  $89^{\circ}$ ,  $90^{\circ}$ ,  $92^{\circ}$ ,  $92\frac{1}{2}^{\circ}$ ; 7 to 10m.  $92^{\circ}$ —11 to 15 m.  $92^{\circ}$ ,  $93^{\circ}$ ,  $93\frac{1}{4}^{\circ}$ ,  $93\frac{1}{2}^{\circ}$ ; 20 to 21m.  $94^{\circ}$ —each m.  $92\frac{1}{2}^{\circ}$ ,  $92\frac{1}{4}^{\circ}$ ,  $92\frac{3}{4}^{\circ}$ ,  $94^{\circ}$ ,  $94^{\circ}$ ,  $92\frac{1}{2}^{\circ}$ ,  $92\frac{3}{4}^{\circ}$ ,  $94^{\circ}$ ,  $94^{\circ}$ . Put into a bath at  $96^{\circ}$ ; 1m.  $88^{\circ}$ ; 2m.  $90^{\circ}$ ; 3m.  $90\frac{1}{2}^{\circ}$ ; 4m.  $90^{\circ}$ ; great shivering; 5m.  $90^{\circ}$ ; bath heated to  $100^{\circ}$ ; 6m. shiverings; 7m.  $90^{\circ}$  shiverings; 8 and 9m.  $90\frac{1}{2}^{\circ}$  shiverings; 10m.  $92^{\circ}$ ; bath  $104^{\circ}$ ; 12m.  $94^{\circ}$ ; 13m.  $93^{\circ}$ ; bath  $108^{\circ}$ ; shiverings; 14m.  $93^{\circ}$ ; a bladder with very hot water to the stomach 15m.  $94^{\circ}$ , 16m.  $96^{\circ}$ : comfortable.

VI. Edwards; heat  $97^{\circ}$ ; pulse 90; bath  $40^{\circ}$ ; remained  $\frac{3}{4}$ th hour. "The mercury fell at first to  $92^{\circ}$ —was stationary a few minutes, and then mounted as usual with no regularity. In 22m.,  $96^{\circ}$ , and then began to decline; in 23m. more sunk to  $94^{\circ}$ . In bath at  $96^{\circ}$ ; shiverings continued several minutes, his heat remaining at  $90^{\circ}$  and  $91^{\circ}$ ; in 7m. began to rise fast, and in 5m. after it was  $96^{\circ}$ ."

VII. Sutton  $94^{\circ}$ ; water  $40^{\circ}$ ; remained 45m. heat fell to  $83^{\circ}$ ; in 13m.  $92^{\circ}$ —stood for 19m. longer with little variation: then fell in 3m. to  $85^{\circ}$ . Put in a bath at  $96^{\circ}$ ; shivered much; bath raised to  $109^{\circ}$ ; recovered his temperature in 28m. "*The curious phenomenon,*" says Dr. Currie, "*of the heat rising, and falling, and rising again, in the bath, with the body at rest, the surrounding medium unchanged, is, I think, fatal to those theories of animation.*" &c. True of the dead body, also.

VII. Edwards,  $98^{\circ}$ ; pulse 92; air  $41\frac{1}{2}^{\circ}$ ; water  $40^{\circ}$ ; immersion, 1m. up to 7m. thus:  $97\frac{1}{2}^{\circ}$ ,  $97^{\circ}$ ,  $98^{\circ}$ ,  $97\frac{1}{2}^{\circ}$ ,  $96^{\circ}$ ,  $96^{\circ}$ ; 7 and 8m.  $96^{\circ}$ ,  $97^{\circ}$ ,  $97^{\circ}$ ; 11 to 14 m.  $96\frac{1}{2}^{\circ}$ ; 15 to 20 m.  $96^{\circ}$ —to 25m.  $95^{\circ}$ ,  $94^{\circ}$ ,  $93\frac{1}{2}^{\circ}$ ; 28 and 29m.  $94^{\circ}$ ,  $93^{\circ}$ ; 31 and 32m.  $94^{\circ}$ ; 33 and 34m.  $92\frac{1}{2}^{\circ}$ ; warm bath,  $90^{\circ}$ ; feet warm; feet and hands pained; in 2m. violent shiver, heat fell two deg.; heated bath to  $99^{\circ}$ —still cold; bath  $99^{\circ}$ ; and five minutes

after his heat was 91°; bath 106°; in half an hour after his heat was 93°, when he became sick and very languid, a cold sweat covering his face, his pulse very quick and feeble; was removed to bed, but passed a feverish night; next day had wandering pains over his body, with great debility, resembling the beginning of a fever. After the use of cordials and rest these symptoms went off. I. 145 *et seq.*

Dr. Currie says: "A few degrees of increase or diminution of the heat of the system, produces diseases and death." Of Scarlatina, he says "that the heat rises to 105°-106° in mild cases, and in violent ones to 108°, 109°, 110°, 112°, the highest ever observed, says he in the human body. It is on the first appearance of this high temperature that it is necessary to act with vigor. On our conduct at this critical season the patient's life often depends." "The great heat I consider the most important feature of the disease. Scarlatina Anginosa, is probably the hottest of all diseases—certainly the hottest of all the febrile diseases of this climate (G. Britain)—a fact which I have ascertained, and which was never before ascertained so far as my inquiries extend." Dr. C., used cold, sometimes tepid water in Scarlatina with a success nearly invariable, in 159 cases, in 1801—to be used early in the disease when the skin is dry and the heat greater than natural.

The following extract illustrates Dr. Currie's valuable but neglected method of treating Scarlatina:

"In the year 1798, 1799, and 1800, several cases of Scarlatina occurred, in which I employed cold and tepid affusion, according to the degree of heat and stages of the disease, with very general success. I was fully prepared therefore for the treatment of the wide-spreading and fatal epidemic which broke out the latter end of the summer of 1801. My family was at that time in the country, where it was seldom in my power to visit them. The scarlet fever had appeared among the children in their vicinity, and carried off several. My two youngest children who had not had the disease, both boys, one five, and the other three years of age, had been in company with some of these children at play, and had been exposed to the contagion. I gave directions that they should be watched narrowly, and that I should have intimation of the first appearance of complaint. On the morning of the fifteenth of August, a message was sent me, that the eldest of the two had been restless and uneasy in the night, with feverish chills, and pain in his head and back. I saw him in seven hours from the first of these chills: he was then becoming hot, and had vomited up his tea: his face and neck were beginning to flush, and it was evident that he was attacked by Scarlatina. His younger brother had constantly slept in the same bed with him; though then walking about, he was evidently spiritless and languid, and there was little doubt that he had also had caught the disease. In a little while the eldest boy became very hot, and the youngest sick and restless. He followed his brother, step by step, at



the distance of about seven hours. The heat of the eldest soon raised the mercury of the thermometer to  $106^{\circ}$ ,  $107^{\circ}$ , and  $108^{\circ}$ , and in both the symptoms prognosticated a violent disease. I had lost a girl of four years of age in Scarlatina a few years before, though her first symptoms were far less violent; she perished in consequence of the ulcerations extending to the epiglottis and larynx, and producing the symptoms of genuine croup. I shut myself up with these boys; and with plenty of pump water and a pocket thermometer, prepared, not without anxiety, to combat this formidable disease. It would be tedious and useless to go into details. As soon as the sensation of heat was steady in my eldest boy, I stripped him naked, and poured four gallons of water over him, of the temperature of  $64^{\circ}$ . The usual good effects immediately appeared, but at the end of two hours he was as hot as ever—the remedy was again applied, and repeated as the return of heat indicated. By the time the eldest was ready for his third affusion the youngest was ready for his first. The heat rose in the eldest to  $109^{\circ}$ , in the youngest to  $108^{\circ}$ , and the pulse in each was upward of 150. In thirty-two hours the first had the affusion fourteen times; eight times cold, twice cool, and four times tepid. Twelve affusions sufficed in the case of the youngest, of which seven were cold. The fever was in both completely subdued. On the morning of the third day they were both evidently safe; and on the morning of the fourth, though the pulse was still a little more frequent than natural, they were both convalescent. In this state they inclined to sleep and rest. The scarf-skin peeled off them both and each had a slight degree of swelling in the hands, but none of the other secondary symptoms.

I might multiply these details, for the epidemic of that season would afford me ample scope; but this would be tedious and unnecessary—one other narrative, illustrative of the effects of the affusion in different stages of the disease, shall therefore suffice.

In the same month, (August, 1801), the Scarlatina appeared in a back court out of Peter street, which contained eight small houses, and forty-eight inhabitants, twenty-six of whom were children. The two first that were affected died; several others were taken ill, and consternation seized the rest of this little community. It happened that Mr. Barr, foreman in Mr. McCreery's printing office, lived in this court, and that two of his children were affected by the disease. He applied for my assistance, and I undertook of course to give it the others also. I found nine children in different stages of Scarlatina, but all admitting of the use of affusion, cold or tepid. I had not the slightest difficulty in persuading their parents to use it; they all followed implicitly the example of Mr. Barr. The mode of applying it was simple enough. The weather was warm, and the patients were brought out into the middle of the court, naked, where the water from the neighboring pump was dashed over them. As the heat declined, the water was made tepid. Not only was the affusion employed for the sick, but once a day for the children in health also. It might serve as a preventive, and at any rate it promoted cleanliness, which was enforced as essential. Ventilation was also promoted to the best of our power.

After this system commenced, four or five others were seized with the Scarlatina, who all had the disease in the most favorable way. Those in whom it was advanced, when I first saw them, went through the secondary symptoms—one of them with severity; but the whole recovered. No medicines were used, except a beverage of water acidulated with muriatic acid, an infusion of Cayenne pepper as a gargle, and calomel, where a cathartic was required—Milk, broth, and gruel formed the nourishment.

This disease continued prevalent during the autumn of 1801, and throughout the succeeding winter and spring; and though less frequent since, it may be said to have been constantly present in Liverpool, in a greater or less degree, up to the present time. In all the cases which I have seen during this period, amounting to upwards of a hundred and fifty, I have uniformly followed the practice which I have just described and with a degree of success so nearly invariable, that I cannot contemplate it without emotions of surprise, as well as of satisfaction. In the course of this time, I have had occasion to combat the Scarlatina twice in public schools, and in both instances was completely successful, not merely in the recovery of my patients, but in stopping the progress of the disease."

My clinical experience in cold affusions, though very limited in scarlatina, coincides with that of Dr. Currie. Nevertheless, the insuperable inconveniences of this favorite method of his, renders it unadvisable. It is true, the poor may be placed horizontally upon the flooring of their miserable shanties, to be deluged with water, which runs through the open crevices; but not so in a carpeted room. To carry the sick into a court, out-house, or bathing room, or to cause them to sit up, as Dr. Currie did, is not free from danger, and, in yellow fever, typhus, &c., must produce, in many cases, great, if not fatal exhaustion. These difficulties are avoided by sponging and free ventilation. An extra sheet or cover placed on the bed, upon which the patient may be rolled over without rising, is all that is requisite—and even this may be dispensed with, in sponging.

Sponging is all-sufficient. Indeed, upon carefully reviewing Currie's experiments as already detailed, it will be seen that healthy persons immersed in 170 gallons of water but little above the freezing point, suffer comparatively little refrigeration until they leave the cold bath, expose themselves to free currents of air, and discharge, by evaporation the water adhering to the skin. This result puzzled Dr. Currie.

In cool weather the naked body, exposed to currents of air, refrigerates with surprising rapidity. By this means and sponging every desirable effect may be attained in this behalf.

Those who have no faith in the existence of perspiration which they can neither see nor touch, should know that experimental physiologists

have obtained data by which they are able to estimate the actual weight of matter parted from the body in health by aëriform exhalation, &c., chiefly from the skin, at about five pounds daily, and this too, without it may be, the appearance of liquid sweat or wet garments.

Among those attacked in the great epidemic yellow fever of 1853, (I speak solely from my own experience among patients under my care, or seen in consultation) a considerable number had spontaneous, profuse, hot perspirations, through the whole course of the disease, which saturated their garments, beds, and bedding. In a few instances my authority was wholly insufficient to cause these latter to be changed during the entire course of the disease. Neither could I induce the friends of the sick to permit the access of the pure air from without. Deprived of ventilation, these patients respired foul air, and, also, weltered in clothes and skins loaded with viscous, oily, acid, saline matters and cuticular exfoliations originally parted from the body as effete or deleterious, but which, nevertheless, were carefully confined around their bodies for fear the sweat should dry up!

Effete deleterious matters thus confined in a liquid or humid gaseous form upon the cutaneous surface, would probably to some extent, undergo reabsorption. In the first decennium of the present century, Prof. Mussey, now of Cincinnati, found, after immersing himself in a madder-bath, that for the two following days he had "plenty of madder in his urine." (Prof. Davis' Hist. Am. Med. Assoc. 163-4.) An infusion or cataplasm of tobacco applied to the skin, speedily produces severe nausea, prostration, fainting, &c. All know that not a few articles of the *Materia Medica* act through the skin upon the whole system, as belladonna, stramonium, cantharides, &c. Hence, the term endermic medication.

Medicines and poisons enter the economy by pulmonary inhalations. The deleterious exhalations discharged from the lungs of patients in closed unventilated rooms and in hospitals, reënter the system by this same route, which, upon every rational principle of analogy, not to say direct experiment, must be injurious to both the sick and the well. The inhalation of effete gasiform animal matter is a most unfavorable but unavoidable circumstance incidental to crowded hospital practice.

Sponging cleanses the skin keeping the outlets of the sudoriparous ducts open, thereby favoring the escape of sensible perspiration, which facilitates the discharge of oily matter from the sebaceous glands—promotes the elimination of carbonic acid, and, perhaps, also, the deleterious principle which constitutes fever *per se*, or its *causa vera*.

Many regard spirituous liquors applied to skin, as being free from all danger, who fear water of the same temperature as being injurious



from its coldness; whereas, the contrary effect is produced; for, a mixture of water and spirits, or spirits, water and vinegar, being more volatile, abstracts heat or refrigerates more rapidly from the facility with which it evaporates, as compared to simple water of the same temperature, as already intimated.

In so far as refrigerants are beneficial in diseases characterized by preternatural heat, not only will druggism decline, but rationalism will advance. Therapeutics needs a clear and well defined type alike from physics, physiology, and pathology. Such cold water is.

The present, and all former classifications of the *Materia Medica*, are altogether unsatisfactory, because uncertain and capricious. The action of medicine on the system is in the same deplorable category. The changes that medicines undergo during and subsequent to their absorption into the blood and tissues; their combinations, recombinations, decompositions, their *modus operandi*; their ultimate effect, and their final elimination from the economy, have been experimentalely investigated by the great masters of science of the present generation, with what small success let the clashing classificatory systems of *Materia Medica* and therapeutics tell!

When there is a persisting subjective chilliness, though there may be objectively, as tested by the thermometer or touch an elevated heat, cold applications should be avoided.

As a general rule augmenting heat in the inception and earlier stages of disease requires more active refrigeration than in latter stages, though the degree of heat may be actually the same as in the invasion. The reduction of heat thus effected is often permanent.

Neither cold air nor cold water is adapted to all cases of fever, especially such as have a low and unequally diffused temperature, and such as are in the advanced or convalescent stages. Under such circumstances, in connection with a sudden fall of the external temperature, it is often of fundamental importance to guard against cold, warmth being instinctively called for by the sick and clearly indicated to the physician.

In the same patient and at the same time hot and cold applications may be indicated in different regions—a hot mustard foot bath for coldness of the feet—ice to the hot forehead.

In yellow fever the frontal pain, limited to a small space above the eyes, can in most instances be temporarily, if not permanently removed or mitigated by the application of ice, &c. Pounded ice put into a bladder and applied to the forehead in the early stage of yellow fever for the relief of supra-orbital pain is a very successful and signifi-

cant experiment, affording, also a type of the therapeutic value of refrigerants. This practice, long in use in New Orleans, for the removal of the peculiar headache of yellow fever, is highly suggestive of two problems not yet fully solved, namely, does this frontal refrigeration act locally? Is it not general in its action? That is to say, does it not often abstract the unnatural heat from, and through the entire system? This subject though open for further direct experimentation with the thermometer, I can answer at least analogically by an extensive series of physiological experiments made upon the body in health, clearly showing that local refrigeration of one or both feet, one or both hands or wrists—refrigeration of the forehead, or other region, will lower the temperature of the entire body. By another route this view is confirmed. It has been found by a few experiments that when a patient is in the early hot stage of yellow fever, with an equally diffused heat, the immersion of the feet and legs in a hot mustard foot-bath, causes the mercury in the axilla, palms, &c., to rise more or less.

ART. IV.—*The Vital Statistics of Negroes in the United States*; by  
B. DOWLER, M.D.

THE colored population of Boston, in 1850, amounted to 2,085; and in 1855, to 2,216. Hence, the increase, which scarcely deserves the name, was in five years only 131, averaging 26 per year. At the former period, the total population was 138,788; at the latter period (1855), 162,748\*; showing an increase in 5 years of 23,960 souls. Census of Boston, (1855.)

In this work the vital history and mortuary statistics of the black race in Boston, are almost completely ignored, with the exception above noticed.

Sanitarians and vital statisticians of the South, albeit slave-holders, have not yet been able to solve the enigmas uniformly presented by the United States census concerning the statistical history of the blacks of the North; their unparalleled deterioration, their frequent insanity, dementia, blindness, deafness, pauperism, premature death, their decrease, or minimized ratio of increase, their physical degeneration and tendency to extinction. The numerical data in relation to these deplorable conditions of northern blacks, would seem incredible, did not every decennial enumeration of the population give the same result for much more than half a century.

—\* There is a slight discrepancy, of no importance, in some of the numerical calculations occasioned by the enumeration, or by the omission of a small portion of the suburban population, all of which Dr. Curtis has noticed.—ED. N. O., MED. & SURG. JOURNAL.

According to the Census of New York State for 1845, the colored non-tax paying population amounted to 42,321 ; the colored tax payers to 2,025—voters 1,001.

Professor Lee, of New York, in his medical statistics of that city gives the following account of its free blacks:

“The colored population of the city of New York, in 1835 was 15,210—the fact that only 79 were taxed, shows conclusively the generally impoverished condition of that race. Indeed, a striking feature in the population of New York, as well as in all our principal cities, is the degraded and wretched state of the blacks, not one-tenth, according the best calculations, have any regular employment, but depend on transient jobs, stealing, begging and public charity for support. During the year 1829, two thousand and nineteen colored children were committed to the Penitentiary as criminals. The average excess of deaths, of blacks over whites is 18.60 per cent.—from consumption double. The average deaths of whites, 1 to 36—blacks 1 to 21.3 per annum.”—*Am. Jour. Med. Sci.* Nov. 1836.

The average number of deaths in Philadelphia, according to Dr. Emerson, is for whites 1 in 50.8, and for blacks 1 in 19, being for the latter more than double, yearly.

A slight historical retrospection of the progress of the black population of Massachusetts, will serve the purposes of illustration for the whole of the Northern States.

According to the Compendium of the United States Census (1854, p. 83,) the blacks of Massachusetts amounted to 3,500—in 1790 to 5,463—in 1800 to 6,452—in 1810 to 6,737—in 1820 to 6,740—in 1830 to 7,048—in 1840 to 8,669—in 1850 to 9,064—an increase in seventy-four years of 5,564, at the rate of 75 and a fraction per year, not withstanding the great influx of absconded and manumitted slaves from the slave-holding and the free black immigrants from the non-slave-holding States. In sixty years the black population of Massachusetts increased only 3,601, averging 60 per annum.

The total population of Massachusetts in 1890 amounted to 378,717 which in 1850 had increased to 994,514, having in fifty years tripled less by 141,637, while the ratio of increase among the blacks during the same period fell far short of doubling, namely, by 1,862—a ratio which indicates almost ninety years as the meantime required for the doubling of the black population in that State. Without immigration it is probable that a decline would have occurred.

The population of the Republic in sixty years, ending with 1850, increased from 3,929, 827 to 23,191,876, and the slaves from 697,897



to 3,204,313—an increase of slaves of 2,506,416, averaging 41,776.93 per year and doubling nearly  $4\frac{3}{4}$  times in sixty years.

The increase of free colored persons from 1810 to 1830, was much less than half as great as that of the two preceding decennial periods, (from 1790 to 1810), though this class has been constantly augmented by many absconding slaves, and more than all by emancipation. Here, the most powerful causes added to the natural multiplication of the species, have indicated a decline so rapid as to threaten the extinction of the race, should all be emancipated. The decennial period ending in 1820, gave an increase for slaves of about 29—for whites 34 and for free persons of color only 25 *per centum*—being for the latter, a decrement of nearly  $3\frac{1}{3}$ , when compared with the decennial period which closed the last century.

The total increase of the colored population for 40 years ending in 1830, was at the rate of 209 for the 100—that of the white race, 237 $\frac{1}{2}$ , the latter possessing the numerical advantage of immigration, which was completely interdicted to the black race in 1808, by an act of Congress abolishing the slave trade under the severest penalties.

According to the two last decennial censuses of the United States, the free colored population of all the States in 1840 and in 1850, afforded a decennial increase of 20.87 per centum, for the former, and 12.47 per centum for the latter, while the slaves for these periods respectively increased at the rate of 23.81, and 28.82 per centum. Thus the ratio of increase for free blacks as compared to the slaves, declined much more than half; 12.28, omitting fractions! (See Census, Tab. LXIII, 4to edition.)

The ratio of the colored to the total population of Massachusetts, was, in 1840 as 1.18; in 1850, as 0.91—a decline of nearly half! The total colored population of 1850 was 1,999. The ratio of increase for the colored population of Massachusetts per centum for the decennium ending in 1850 was four times less (omitting fractions) than that of the preceding ten years, (1830-40).

From Malthus to the present time, statisticians have interrogated their million of millions of facts, and have got reliable answers, namely, that the physical comforts, as suitable food, clothing, ventilation, exercise, lodging, fuel, and so, forth, contribute to health, long life, increase of population, and protect against the dangers of epidemics and all forms of disease, the physical deterioration of a people, and even protect against the vices, while on the other hand, misery, arising from deficiency in the means of subsistence and the absence of the physical comforts alluded to, tend universally to repress the increase, longevity, and well-

being of population. Thus misery and vice as Malthus contended, keep down the population to the level of the means of subsistence, that is, the physical comforts.

The Boston Census Report of 1855, recognizes the physical condition of a people as the unerring criterion by which to judge of "the health, real happiness, and all the great purposes of human existence". "The most substantial indication of true and permanent prosperity of any people, is that which exhibits a high degree of public health. Of any communities that enjoys the most real happiness, and is best fitted to fill all the great purposes of human existence, which possesses, individually and in the aggregate, the best physical condition." 64.

"A low physical condition begets, and is almost inseparably connected with a low moral condition." 70.

Waiving the ethical question of slavery as not strictly appertaining to sanitary science—though in fact whatsoever augments the physical well-being of a population must be viewed somewhat charitably, and whatsoever tends to extinguish a race, must be held as more or less suspicious—it must be admitted that practically speaking, no class of society, not even the most favored aristocracy extant, equals the negro slaves of the South in increase, good health, long life, &c., while, in the North the negroes, as freemen, present if not the probability of extinction, yet the elements of physical well-being in the lowest possible degradation yet reached by humanity. The causes which have tended to results so deplorably uniform under the direct observation of Northern sanitarians and physiologists, ever since the foundation of the Republic, are worthy of investigation even to the exclusion of more remote statistical questions in foreign lands.

The blacks imported from Africa everywhere beyond the limits of the slave-holding States of this Republic tend to extinction. The Liberian experiment, the most favorable ever made, is no exception to this general tendency. According to the Report of the Colonization Society for the thirty-two years ending in 1852, the number of colored persons sent to Liberia amounted to 7,592, of which number, only "six or seven thousand" remained. The slave-holding States sent out as immigrants 6,792, the most of whom were emancipated slaves; the non-slaveholding States sent only 457 persons. (Comp. U.S. census 63.)

Mr. Penney, formerly Governor of Liberia, says, "of sixty-two missionaries sent from the United States, forty-two died within a few months after landing—eighteen of the survivors returned home with broken constitutions." (*Bost. Med. Jour.* 1846).

The black race is doomed to extinction in the West Indies, as well as in the Northern States of this Republic, if the past be a true index of the future, unless the deterioration and waste of life shall be continually supplied by importations from Africa, or by fugitive and manumitted slaves from the Southern States.

M. Humboldt (*Personal Narr.* 7 vols.) has with his usual accuracy compiled from official sources, the vital statistics of the West India slaves to near the close of the first quarter of the present century, (one decennium before the abolition act of Parliament.) He estimates the slaves in these Islands at 1,090,000—free negroes including Hayti, at 870,000;—total 1,960,000. Mr. Macgregor in his huge volumes on the Progress of America, gives the total aggregate of blacks at 1,300,000 in the year 1847, showing a decline in the preceding quarter of a century, of 660,000.

M. Humboldt says that "the slaves would have diminished, since 1820, with great rapidity but for the fraudulent continuation of the slave trade."

By another calculation, it appears that in the whole West Indian Archipelago, the free colored, numbered 1,212 900; the slaves 1,147,500—total 2,360,500, showing a decline in less than five years of 400,500, notwithstanding the accessions by the slave trade. That this trade continued up to 1838, the writer of this paper knows from personal observation in Cuba.

D. Turnbull, Esq., A.M., in a work on Cuba, (London, 1840,) says that "the slave-trade is on the increase; in 1837 there were 78 acknowledged arrivals in that Island under the Portuguese flag, and three under the Spanish, bringing 24,000 slaves. For every negro imported into Cuba an ounce or doubloon is levied, one fourth of which goes to the Captain-General, another to the captain of the coast-guard, another to the harbor master, and the residue to the local chief of customs." 156. "In 1837-8, there were imported, according to Lord Palmerston's estimate, 40,700 slaves, landed near Havana, without including other places in Cuba, that is, 19,300 elsewhere." 352. Mr. Turnbull quotes other authorities in which the annual importation is reckoned at 60,000; he also quotes Dr. Bowring for the statement, that "five or six years are sufficient to sweep away a generation of slaves, at the end which time the whole has to be replenished." 362. 371.

According to M. Humboldt, the negroes upon the continent, in the whole of Spanish America, amounted in 1823 to 387,000.

Since the abolition Act of Parliament, it will be seen from the works of the most reliable statisticians, of later dates than M. Humboldt's



work, that in the British West Indies the ratio of decline among the black race continues.\*

"Messrs. Long, Porter, and Tucker, in their joint work on America and the West Indies (London, 1845) say: "By the Register of Slaves (in the Island of Trinidad,)

between 1816 and 1819, the deaths exceeded the births by 1,361.

" 1819 " 1822,..... 1,101.

" 1822 " 1825,..... 119.

" 1825 " 1828,..... 377.

The number of slaves in 1816 having been 25,544, it follows that the decrease in 12 years was more than 11½ per cent. In St. Vincent the decrease by deaths over the births in 14 years, from 1817, to 1831, was 2,579 : Nevis had in 1788 a total population of 10,070, but in 1836, only 9,250 : St. Christophers, in 14 years ending in 1831, had decreased 334 in 20,168 slaves : in Dominica in 9 years ending with 1826, the deaths among the slaves exceeded the births by 662, among a population of 17,959 : In the Spanish Island of Puerto Rico the slave population in 1817, was 346,150; in 1832 it was only 302,666—a decline of 43,484: In Martinique, a French Island, the births of whites and free colored were 29, to 37 deaths—the slaves giving 32 births to 35 deaths."

In reference to the African race of the West Indian Islands, M. Humboldt says that "under the English domination the population diminishes 5 and 6 per cent. annually; before the abolition of the slave trade, the slaves in Jamaica diminished 7,000 annually." "The diminution in Cuba is 8 per cent. per annum, but the annihilation of 200,000 in 42 years supposes an annual loss of 26 per cent." vii. 135. He says Jamaica alone received 850,000 blacks from Africa, and from 1700 to 1808 nearly 677,000, "and yet" he adds, "that Island does not now [1825] possess 380,000 blacks, free mulattoes and slaves." vii. 148.

The decline of the African race in Cuba has been sometimes attributed to the small ratio which the female importations bear to the male, an idea which M. Humboldt favors. But this cannot be the reason,—for in Islands where the decline has been greatest, as in Jamaica and other English possessions, the female slaves have outnumbered the male, by an excess of 3½ per cent., according to M. Humboldt's own figures. Indeed M. H., expressly says in another page, (150) that "it is *not* the disproportion between the sexes which causes the want of increase natural to the West Indies."

It must not be forgot that the mulattoes both the free and the slaves have an element of increase from the whites, particularly in the West

\*See America and the West Indies, by Mr. Porter and Professors Long and Tucker; also Mr. Macgregor's Progress of America, 1847, &c., &c.

Indies, which makes the decline the more striking seeing that the mulattoes are numbered with the colored or black race.

The late Mr. Gallatin, formerly Treasurer of the United States, reckons the entire importation of blacks into the territorial limits of the Republic, at 300,000—now not less than four millions! M. Humboldt in the work above mentioned adds up the importation of blacks into the British West Indies from 1680 to 1786, which reaches, in 106 years the enormous aggregate of 2,130,000. This aggregate includes neither the slaves imported openly up to 1824, a period of 38 years later, nor those imported at an earlier date, reaching back for the West Indies, to 1503—a period of 177 years anterior to M. Humboldt's point of departure—a period of more than a hundred years before the first white immigrants reached the shores of this Republic.

M. Humboldt says: "The whole Archipelago of the West Indies which now comprises scarcely 2,400,000 negroes and mulattoes free and slaves, received from 1670 to 1825, nearly 5,000,000 of Africans." VII 272. Add to this all the importations, of which no exact records exist from 1503 to 1670—a period of 177 years, and then add the enormous importation since 1825, down to the present day, Aug. 8, 1856, to which add, the natural increase as proved by the statistical history of a handful of slaves imported at a comparatively late period into the slaveholding States of this Republic, not exceeding 300,000, yet soon multiplying to 4,000,000. These 300,000 ought to have been extinguished wholly ere now according to the ratio of decline observed in other slaveholding lands—consider these things, ye weeping philanthropists of the North, and of realms beyond the ocean, and of the Islands of the distant seas—weep for the many millions imported during 350 years from Africa, whom the vital statistician can nowhere find but in the oblivious grave, in mouldering bones. Why should the heart of the great world sob itself into convulsions over the slave holding States of this Republic, the oasis of the African desert, where alone the negro has a home, if not freedom, where he prospers most, has the greatest amount of the physical comforts, increases fastest, lives longest, and enjoys the best health, slaves nevertheless. The negroes of Africa now more than ever eat one another. They are everywhere crushed out beyond the limits of the slave-holding States.

A French Naval Officer, who with his suite was hospitably entertained by the Negro King of Dahomey, during the Presidency of Napoleon, now Emperor of the French, relates that the King feeds his large army of female and male soldiers with the flesh of his captives, whom he can now no longer sell to the whites. The French officer

shocked at seeing human beings thus butchered, frequently plead with the King to abandon this practice, but was always answered by his Majesty and Cabinet, with hearty laughter for his eneffable absurdity.

"The chief ornament of the royal residence containing 15,000 inhabitants is human skulls, of which, when a number was wanted to pave a court or decorate a ceiling, it was not an unusual process to have some scores of persons massacred for the purpose." (National Cyclop. v. 210. London, 1848.) The female part of the army is nearly as large as the standing army of the United States usually is in times of peace.

The Ashantee Kingdom bordering upon Dahomey is alike free in all barbarities. The Cyclopædia already quoted says: "The most remarkable among the habitual characteristics of the Ashantees are their warlike ferocity and their love of blood. These passions have, as usual, deeply colored their religious belief and observances. The most horrid of the practices by which they express their devotional feelings are those in which they indulge at what are called the Yam and the Adai customs, the former commencing in the early part of September when the consumption of the Yam crop begins, the latter taking place, on a greater or lesser scale, alternately every three weeks. *On all these occasions human blood flows in torrents.*"

If Negro vital progression had been equally great beyond the limits of the slave-holding States, as within the latter, perhaps, one hundred millions would have ere this have spread over the West Indies and upon the American continent, during the last three and a half centuries. The vital statistician weeps scientifically, that is, to say, arithmetically, æsthetically, and, if inclined to benevolence, ethically too; he will not waste his sympathy over four millions of living negroes whose well-being exceeds that of any other portion of their race, even in their native land,

"Where Africa's sunny fountains  
Roll down their golden sands"—

including New England hills, Canadian snows, and the eternal verdure of West Indian Islands which gem the Caribbean sea.

Mr. Alison, the Scotch Historian, in his work on Population, in comparing the condition of the Irish with the blacks of the West Indies says: "Unquestionably the condition of the Negroes in the West Indies, prior to their late emancipation, generally speaking, was infinitely preferable. It is perhaps the worst effect of that well meant but disastrous measure, that it will approximate the condition and habits of the negro race in those beautiful Islands to that of the Irish peasantry." II. p.506-7. Indeed, this writer lays it down as an axiom, that "slavery results unavoidably from the dependent condition of the laboring classes."



The vital statistician, sanitarian, or physiologist is warranted in scrutinizing any dogma, social or political institution, in so far as it may have a direct influence upon the vital progress, increase, health, sickness, and longevity of population. If, for example, a theological dogma, required the extinction of a race, he might as one of the Faithful adopt it, but as a statistician, he should examine it by the light of scientific investigation, and judge of its sanitary import, &c., as in the cases of Musulmanic and Mormon polygamy, African slavery, and the like, although, in fact, there never was, there is not, nor will there ever be a fundamental antithesis between ethical and physical science. The unity and utility of truth are ever conjoined. Bentham the most voluminous writer upon codification and modern reformation in law, regarded *utility* as the criterion of human virtue and conduct. He says: "a conscientious person is one who, having made to himself a rule of conduct steadily abides by it. In the common use of the phrase, it is implied that his rule of conduct is the correct one. But only in so far as his rule is consistent with the principles of utility can his conscientiousness be deemed virtuous. A good conscience is the favorable opinion which a man entertains of his own conduct; an evil conscience is the unfavorable decision of a man on his own conduct. But the value of the judgment given must wholly depend on its being subservient to, or rather on its being an application of, the greatest happiness principle. That which produces happiness or misery is properly called virtuous or vicious. Virtue and vice are but useless qualities unless estimated by their influences on the creation of pleasure and pain. Effort, undoubtedly, is useful to virtue, and the seat of that effort, in the care of Providence, is principally in the understanding, in the case of effective benevolence, mainly in the will and the affections. *Of all the actions of man, those which preserve the individual, and those which preserve the species, are undoubtedly the most beneficial to the community.* (Jeremy Bentham. Theory of Social Science. I. 137, 141, 145, 146. London, 1834.)

Whether UTILITY be, or be not the true ethical platform, it is not necessary to the purpose in making this quotation, to determine, but in sanitary and vital science, no other platform need be accepted, and on this, the vital statistics of the negro race is placed, as neither the Constitution of the United States, nor the "*higher law*" (or as Luther termed it, the *Pope* that every man carried in his abdomen) is material in this inquiry.

If the vital statistics of the negroes of the Southern States of this Republic, be compared with the vital progress of the aristocratic classes in England, it will be found that the comparison will be to the utmost

degree unfavorable to the latter. The Westminster Review for April, 1847, says, that "*in England, in a great majority of cases the male heirs of the Peerages—and in all cases of the Baronetages become extinct for want of male heirs, though many of each have female representatives.*"

M. Galignani in his Guide to Paris, (1844) says, that nearly all the old Parisian families are extinct—particularly the male portion, and that in the great city of Paris, not one thousand persons can reckon their ancestors as far back as Louis XIII.

The numerical history of the slave population of this Republic, compared to the ratio of increase in France is immeasurably unfavorable to the latter. According to M. D'Angeville\*, and other earlier and later authorities, the ratio of increase in France requires 139 years, and according to the very latest census, 142 years, for the duplication of the French population.

The slaves of the United States increase more than five times faster than the population of France.

In 1840, the slaves numbered 1,333 centenarians, and in 1850 the number was 1,425, while all France had in 1837, but 120 of this age, an unusual proportion of whom were concentrated in the valley of the Garonne. The French population had then, according to the census, but one centenarian to 240,000 inhabitants. According to the last census of the United States there was one centenarian in every 2,448 slaves, a ratio 98 times greater than in the French Empire.

The physiological deterioration of the free blacks, particularly in the non-slaveholding States of this Republic, as set forth and uniformly confirmed by every official Census, is unparalleled in the ethnological history of mankind. This extraordinary degeneration does apply to the low ratio of increase, but to the high numerical proportion of the insane, the idiots, the deaf, dumb, blind, and so forth. The Indian race in North America estimated by Mr. Catlin at 16,000,000 at the time the Caucasian family settled in the country, has dwindled down to a few hundred thousands, without having suffered from similar deteriorations.

This deterioration was called in question by several citizens of Boston. It will be seen by the Compendium of the U. S. Census for 1850, compiled from official documents by Prof. DeBow, superintendent of the Census Bureau, and published by the authority of Congress in 1854, that after a thorough scrutiny by the Government, the authenticity of the census, so unfavorable to the physical and sanitary condition of the free blacks of the North, is fully established, as the following extracts from the work mentioned, (pp. 75-6-7,) will show :

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.....\*Statistique de la population Française, Paris, 1837.

*"Deaf, Dumb and Blind.*—Objection was taken to the statistics of the Deaf and Dumb, Blind, &c., for 1830 and 40, so far as they relate to the non-Slaveholding States, and a memorial was sent to Congress from several persons in Boston, protesting against their publication. The memorial, was referred to the Department of State, and that Department entrusted its examination to a gentleman who had been charged with the preparation of the census of 1840 for the press. The Secretary in transmitting his Report, now in manuscript in the office, and dated February 12th, 1845, says:

'On a review of the whole, two conclusions, it is believed, will be found to follow inevitably. The one is that the correctness of the late census in exhibiting a far greater prevalence of the diseases of insanity, blindness, deafness, and dumbness, stands unimpeachable. That it may contain errors, more or less, is hardly to be doubted. It would be a miracle if such a document, with so many figures and entries did not. But that they have, if they exist, materially affected the correctness of the general result, would seem hardly possible. Nothing but that the truth is so, would seem capable of explaining the fact that, in all the non-slave-holding States, without exception, the census exhibits, uniformly, a far greater comparative prevalence of these diseases among the free blacks than among the slaves of the other States. They are indeed vastly more so among the most favorable of the former than in the least favorable of the latter.'

A strong circumstance supporting the census of 1840, grew out of its near correspondence with that of 1830, in the ratio of the affected to the whole colored population. It becomes necessary to suppose that different sets of persons, residents of the localities, without concert after a lapse of ten years, and with all the checks imposed by the census law, and the publicity required in the exposure of the returns before sending them to Washington, have fallen into the same errors designedly, which no one can for a moment suppose, or accidentally.

Admitting however the census of 1850 to be entirely correct, and the others incorrect, the proportion of the whole colored persons, deaf, dumb, and blind, in the non-slaveholding States is one in every 919, and in the slave-holding States, one in every 1,517. For the insane and idiotic the proportion in the non-slave-holding States, is one in 709; in the slave-holding States, one in 1,821. But if errors are admitted in all of the Censuses, and that they would probably balance each other, a mean of the three shows for the deaf and dumb, and blind, insane and idiotic, one in every 505 colored in the non-slave-holding States, and one in every 1,446 in the slave-holding States."

The slave-holding States of this Republic with a stock of 300,000, such Pagans as those in Dahomey, Ashantee, &c., have presented to the statistician about four millions of souls deeply imbued with the fundamental principles of christianity, that great civilizer. The numerical proportion of christianized slaves is probably greater than that of any other class in the Union. Pile up the pyramid of Negro Skulls *statistically* wasted in Africa, in the West Indies, and everywhere beyond the



limits of the slave-holding States, and lo ! the Bunker Hill Monument, and the Egyptian Cheops will be lost in its overshadowing shade. Mount upon this *golgothan* pyramid—and from its apex survey the vast *Aeldama* around its base, which expands illimitably, save a single oasis that rises to view.

As before stated, statisticians at least, should economize their sympathy, so as not to waste it wholly upon one portion of the American Republic, the vital statistics of which ought to be accepted as satisfactory. He might even distrust speculations which are contradicted by vital arithmetic.



ART. V.—*Fragmentary Notes on Pathological Anatomy*; by BENNET DOWLER, M.D.

THE oft repeated aphorism of Hippocrates, that "life is short, art long, experience fallacious, and judgment difficult," was written thousands of years before the art of printing was discovered—before the miseries of medical journalism existed. Hence, this melancholy maxim is not sufficiently *désolé* to reach the psychological case of an editor, doomed to hear the repeated cries of the Printer's Devil—"More copy!" Edgar Poe's Raven flapping at the door and screaming "Evermore! Evermore!" affords a more significant illustration. Besides, the elements at present, (Aug. 11) conspire to complete this sombrous picture—a storm rages, the wind roars, the rain pours, the cypress moss sighs, trees fall, the river glides, and the printer chides, and the scissors must do the work which the contributors to this Journal ought to do in an abler manner to the credit of Southern Medical literature.

The following Notes, are cut out of XXII MS. volumes in which they are scattered like autumnal leaves, time not permitting me to arrange them systematically. They are mingled with other topics as originally inscribed from day to day in juxtaposition with numerous post mortem, medical, and miscellaneous observations, facts, and histories, constituting the raw material which I hope I may yet find leisure to digest, collate, analyze, and reproduce in a manner more worthy of the acceptance of the student of medicine.

I copy, in the first place, a portion of a synoptical table or guide for making post-mortem examinations, long carried in the pocket, for this purpose, which I have found useful, and which, I venture to think, may sometimes aid the inexperienced student. Without some such guide, I know from sad experience, errors and omissions will often occur.

**APPARATUS.** *Synoptical table. Pencil. Blank-book. Microscope. Thermometer.*

**WEATHER.** *Temperature of the room. Ventilation, &c.*

**CADAVER.** *Time dead. Temperature. Exposure. Position. Contractility. Rigidity. Capillary circulation. Physique. Size. Emaciation. Hair. Cuticle. Skin. Eruption. Petechiæ. Color. Eyes. Expression. Cadaveric injection. Abdominal convexity or concavity. Putrefaction. Gas. Ecchymosis. Endosmosis. Exosmosis. Reddening (oxydation) of exposed cavities and organs in dissection.*

**TISSUES.** *Muscular, Cellular, Adipose, Mucous, Glandular, Fibrous, Venous, Arterial, Serous, Nervous.*

**FLUIDS.** *Blood. Hypercemia. Anæmia. Coagulability. Serosity. Mucus. Pus. Bile. Urine. Stools. Chyle. Black-romit. Erudation. Infiltration. Effusion. Dryness. Abnormities.*

**LESIONS.** **VASCULARITY.** *Injection, both punctiform and aborescent. Vascular turgescence, and collapse. Subcutaneous, subserous, submucous, and intermuscular hemorrhagic injection, infiltration, and effusion.*

**MAGNITUDE.** *Hypertrophy. Atrophy. Weight. Configuration.*

**CONSISTENCE.** *Density. Induration. Softening. Tenacity. Brittleness. Thickening. Attenuation. Occlusion. Ulceration. Perforation. Adhesion. Œdema. Emphysema. Cysts. Gangrene. Osseous, Scirrhus, Cartilaginous, tuberculous, and calcareous concretions and degenerations.*

**ABNORMITY.** *Position. Form. Number. Duplicity, &c. Division. Fusion. Deficiency.*

**COLOR.** *Redness. Blanching. Translucency. Opacity. Melanosis.*

**HEAD.** *Frontal Sinus. Brain. Cord. Ganglionic nerves. Solar plexus. Great nerves of the limbs.*

**CHEST.** *Larynx. Epiglottis. Rima. Trachea. Bronchiæ. Lungs. Pleuræ. Color, consistence &c. Adhesions. Mucous tissue. Bronchial glands. Pulmonary parenchyma. Air cells, Crepitation, &c. Cavæ. Arteries. Pericardium. Liquor pericardii. Heart, auricles, ventricles valves, &c.*

**ABDOMINAL AND GENERATIVE ORGANS.** *Mouth. Gums. Teeth. Tongue. Uvula. Velum. Amygdalæ. Salivary glands. Pharynx. Œsophagus. Stomach. Bowels. Diaphragm. Thoracic duct. Lacteals. Agminated, Solitary, lymphatic, thyroid, ovarian and mesenteric glands. Omenta. Spleen. Kidneys. Ureters. Urinary bladder. Urethra. Uterus. Fallopian tubes. Vagina. Cord, &c. Liver. Gall-bladder and ducts. Pancreas. Peritoneum. Testes. Mammæ.*

**NORMAL, NATURAL OR HEALTHY APPEARANCE.**—The appearance of the organs should not be indicated by words merely suggestive of general theories or prevalent opinions. Actual descriptions should be given founded on sensuous or physical data. The word *natural* is the most theoretical word allowable in descriptive pathological anatomy. It is, to be sure not a description of a thing but the expression of an opinion, which, among beginners in morbid anatomy, may be erroneous, and the more so because it rarely happens that such are thoroughly competent to judge of the natural appearances of the organs unmodified by diseases, unless they have, with this view examined individuals suddenly killed while in health. Having examined all organs and described the morbid changes, if any, found in one or more it will be sufficient to add the phrase, *other organs healthy or natural*. For example, suppose that the lesion of dysentery, hepatitis, consumption, or apoplexy be found in a hundred cases, the organs not affected if described by their natural characteristics as in natural history, would require many thousand descriptions instead of a single word.

**MAMMILLATION.**—This is a fauciful lesion, as it is usually described, and often seen. There is occasionally seen a granular degeneration, with hard, soft or lumpy tumefaction of the mucous tissue of the stomach, in connection with other morbid alterations in that organ. But simple mammillation, is for the most part characteristic of a natural, rather than a morbid condition, happening often in robust constitutions where the organ before and during the agony has been undistended with either food or drinks. In this state the empty stomach, like the empty urinary bladder, is often contracted. The same thing happens often in the large intestine, which, deprived of gases, fluids and solids, becomes consolidated or cord-like, yet not occluded. In the stomach the multiplication of rugosities, ridgy wrinklins, furrowings, and projecting eminences, would occur from the net-like contractions of the muscular fibres exterior to the submucous tissue, as is seen on a small scale, by applying cold air, &c., to the skin, producing what is called goose-flesh. Apply a mosquito-net tightly upon the skin and mammillated eminences will arise in the inter-spaces—an illustration which will apply to post-mortem tonicity of the muscular fibres of the stomach. There is probably, in some cases, a clonic spasmodic action of the muscular coat of the stomach before death, which may continue for a time after death. Analogy is suggestive as the probability of post-mortem rigidity of the muscular system of the stomach. At all events, mammillation is frequently found in stomachs not otherwise denaturalized by disease, particularly in cases where the organ has been found undistended. The irregular



contraction of the fibrous tissue of the skin in the collapsed stage of cholera presents analogous mammillation.

INFLAMMATION.—This compendious word cannot be easily dispensed with in common parlance, in lecturing and in elementary treatises; but in recording post-mortem histories it is wholly unwarranted. It is a vague theoretical word which leads to self-deception, latitudinarian interpretation, and erroneous results, and should be excluded altogether from anatomical description. It is white, opaque, and non-vascular in *arachnitis*—red, vascular, in *ophthalmia*, it indurates one organ, softens another, thickens a third, attenuates a fourth, gangrenes a fifth, infiltrates a sixth, perforates a seventh, enlarges an eighth, wastes a ninth, desiccates a tenth, inundates the eleventh, and so on *ad infinitum*. *The physical appearances alone must be given—accurate descriptions, as in the science of geography, the morbid and healthy geography of organs.*

In post-mortem pathological description, I have avoided the word *inflammation*, a word that even now is so vaguely applied, as to include the most opposite appearances in color, consistence, form and size. When an organ is *blanched, reddened, thickened, thinned, softened, indurated, brittle, tenacious, tumefied, ulcerated, puffy, excavated, infiltrated, perforated, enlarged, diminished or otherwise altered*, the fact is so stated, together with all its accompanying *physical characteristics*. This mode, though not very summary and compendious, is in conformity with the dictates of common sense. Let not the matters of fact be confounded with the matters of opinion.

(*To be Continued.*)

## PROGRESS OF MEDICINE.

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ART. I. *On the Glycogenic Action of the Liver. Notice of the Lectures on Experimental Physiology, applied to Medicine. Delivered at the College of France:* by M. CLAUDE BERNARD, Paris 1855. J. B. Baillière. Translated from L'Union Médicale, of May. 1856: by M. MORTON DOWLER, M. D.

M. Claude Bernard has just put forth, in a volume, the lectures in which he has laid before the College of France his discourses in Glycogeny, and the applications to the theory of diabetes. This newly discovered function of the liver, has already been exposed by him in various writings; but as we might expect, in the hands of this able professor, no physiological subject long remains stationary, but soon widens and extends itself so as to almost entirely change its aspect.

And thus it is with glycogeny. At first this formation of sugar in the economy, was an object of pure curiosity to physiologists. Investigated by the author, to its minutest details, through the medium of ingenious and patient experimentation; associated by him with the great functions of nutrition and calorification, and by him traced in its relation to the action of the nervous system, it has become one of the most interesting subjects, and one of the best elucidated and important points in physiology. We may further add, that the discourses of M. Bernard, have already thrown great light on diabetes, and that they are doubtless destined to throw a still further light on the disease.

It therefore seems to us appropriate at the present time, aided by the book which has just been published, to recur to this subject, and to present to our readers, not an elaborate discussion of the proofs of the glycogenetic function of the liver, but a summary exposition of this function, and the physiological and pathological phenomena which appertain to it; in other words, a synopsis of the work itself.

In all beings, in the animal series, in which the liver exists, even though it exist as it were, in a rudimentary state, it contains sugar.—This is a fact which has not been called in question since M. Bernard made it known. Sugar exists in all, in proportions which present but little variety.

The sugar that is found in the liver is not as such carried into it from without, but has its origin in the organ itself. M. Bernard has proven this, by showing that in animals fed exclusively on azotic substances, as pure gelatine, for example, the vena porta and hepatic artery do not contain any trace of sugar; whilst there is an abundance of it in the liver. The objection has been made that the presence of sugar may be masked, before the reagents by the presence of albuminose in the blood of the vena porta. M. Bernard has shown that the sugar reveals itself perfectly, by the proper process, in spite of the albuminose, when it really exists. The objection has been made that the sugar may have originated from previous alimentation. M. Bernard has taken birds of prey from the egg, and nourished them exclusively on meat, and has always found sugar in their livers. The objection has been made, that the blood of animals butchered, contains a little sugar. M. Bernard has shown that in order to furnish the quantity of sugar found in the liver, admitting as true all the suppositions of the objectors, there would be required a quantity of blood three or four times heavier than all the meat eaten by the animals submitted to the experiments. He has shown moreover, that the flesh he made use of contained no sugar at all.

The absence of sugar, in the afferent vascular system of the liver, in animals in which the liver is nevertheless sugared, is the main proof. I have said, that the sugar has its origin in that organ; but this is not the only proof. This fact finds confirmation in all the essential conditions of the phenomenon, and in a crowd of accessory considerations. Thus the quantity of sugar furnished by the liver is altogether independent of that contained in the aliments; certain excitations bearing directly on the liver, or through the intermedium of the nervous system, give evident activity to the formation of sugar. Refrigeration, pushed to a great extent, suspends the formation; so that it will very soon disappear entirely. On the other hand, if the animal be submitted to the warming process, sugar, which had thus disappeared from the economy, will again be generated, without even resorting to alimentation.

It is then a fact well established by the author, and in our opinion beyond all manner of controversy, that the sugar which is found in the liver is generated in that organ. We shall see in the sequel, that with the exception of the sugar of milk formed in the mammary gland, in what part soever of the animal economy sugar is found, it always has its origin in the liver. But this great fact is only the first point in the question. Let us follow it then in its developments. And to begin, what are the constituents of the blood at the expense of which the sugar is formed?



The analyses of Lehmann unite themselves to the researches of M. Bernard to show, that these are the albuminoids. Lehmann has seen the blood, in traversing the liver, lose all of its fibrin and the greatest part of its albumen, which are replaced by sugar. On the other hand, M. Bernard has shown, that fibrinous and albuminous alimentation ministers perfectly to the glycogenic function, whilst under an exclusively fatty diet, it is extinguished; and that sugar introduced into the digestive organs, whether in its proper form, or in the form of amylaceous matter, so far from being utilized by the liver as sugar, is on the contrary destroyed, and transformed by it into a special fatty emulsive matter. The albuminoid materials are not at once transformed into sugar, but pass at first into the liver in an intermediate form. This substance, which has its birth in the organ itself, under the influence of its own activity, is transformed spontaneously into sugar, by a kind of fermentation, under the influence of a proper temperature alone, even after death, and externally to the organism. The author has not thus far been able to isolate it, and he only knows that it is insoluble in water, alcohol, and ether.

As in case of the other secretions, that of sugar, by the hepatic gland does not take place otherwise than under a special action of the nervous system. The nervous incitation necessary to the accomplishment of this function, is transmitted to the liver by the great sympathetic, which receives it from the spinal marrow, and the activity of the latter is restricted to a reflex action, brought about by the portion of the pneumogastric, which is distributed to the lung. By the following series of experiments, M. Bernard has been enabled to recognize and demonstrate this mode of action of the nervous system on the glycogenic function. When the pneumogastric is divided in the neck, sugar is no longer formed in the liver. This nerve, then, has a demonstrable influence. Nevertheless, this is not by a direct action on the liver; for when we cut the same nerve, between the lungs and the liver, the glycogenic function is not disturbed; and if after the section of the pneumogastric, in the neck, we galvanize the inferior end, we cannot arouse the annulled function. On the contrary, if we galvanize the superior end, we find the sugar forming again in the liver; which proves that the action of the pneumogastric is here centripetal.

On the other hand, M. Bernard has found the *colamus scriptorius* to be a medullary point, which if irritated, exaggerates in a most obvious manner, the glycogenic function. He has also observed that a division of the spinal marrow above the brachial expansion, arrests the formation of sugar in the half finished state, and permits only the formation of the

intermediary substance of which we have already spoken : this action continues only so long as the inferior cervical ganglions, and the superior thoracic of the great sympathetic, have not been destroyed ; and, finally, the section of the spinal marrow, below the brachial point alluded to, annuls completely the glyeogenic function.

The formation of sugar in the liver is accompanied by two important phenomena which associate themselves with the destruction of fibrin and albumen, of which we have already spoken. These are the formation of white globules in the blood, and a marked elevation of temperature.

Lehmann has verified the fact, that the blood which goes out of the liver, contains much more white globules than that which enters into it ; and that the formation of these globules appear to be ultimately connected with the presence of sugar. In fact, M. Bernard has observed that the blood, when abandoned to itself, simply putrefies ; but that if we add a small quantity of a sugared solution, it speedily forms cells of which the first have a very exact appearance of the chemical character of the white globules of the blood. On the other hand, we know that the formation of new cells in vegetables is accompanied always with the production of saccharine matter. It is therefore rendered very probable, that the sugar plays here an important part in the generation of new globules.

As to the augmentation of temperature, M. Bernard has been enabled to verify it in a direct manner. It is such, that the blood which comes out by the supra-hepatic veins, is warmer by about  $\frac{1}{4}$ ° 40, than that of the vena porta ; and that the former is the point at which the temperature is higher than that of any other in the whole body.

The sugar which has its birth in the liver, is transported as regularly as formed, by the blood of the infra-hepatic veins ; and in such manner that the quantity found in the liver, is always very nearly the same, in the physiological state. But the quantity which is formed, and which passes through the supra-hepatic veins, is very variable. It is augmented much during digestion ; diminishes in the interval ; and it varies also under the influence of certain physiological excitations of the liver, and of the variable activity of the abdominal circulation.

No sooner has the sugar emerged from the liver, than its mission is terminated ; and it is destroyed by its arrival in the lungs. This destruction is not effectuated, as is believed, by a species of combustion, from contact with oxygen ; for we do not see that the destruction is less complete in animals which are made to breathe in an atmosphere containing very little oxygen ; and besides, experience shows that the

destruction of the sugar of the liver takes place equally well in every gas. Finally, a proof not less positive is, that the sugar which forms in the liver is destroyed in the same manner in the fœtus, which does not respire, and in which consequently it cannot be destroyed by oxydation. The sugar is destroyed by a species of special fermentation, and is transformed, to all appearance, into lactic acid.

In the physiological condition, the destruction of sugar is ordinarily completed in the lungs, and it does not pass beyond this. But when the production is exaggerated, under the influence of digestion, for example, all the sugar which goes out of the liver, is not so promptly destroyed ; and a part of it passes the lungs, and enters into the general circulation. Entering thus, it may, if it be in sufficient quantity, pass into various secretions. That into which it most readily passes, is the cephalo-rachidian fluid ; and here it is almost always found. { Next comes the serous, then the gastric and renal secretions, through which it passes with more difficulty, and only in case of great excess, which is rarely seen. As to the salivary and cutaneous secretions, they never give it exit.

It remains now for us to speak of the manner in which the glycogenic function sets itself up in the fœtus, a point which M. Bernard has also elucidated in a very ingenious manner. During the first period of fœtal life, the glycogenic function is not located in the liver ; but sugar is produced in every part where the muscles are undergoing formation. The lungs are generated in a sugared medium. But it is not thus with any of the organic systems. Towards the end of the fourth or fifth month, the sugar begins to form in the liver ; and then it disappears from every other part of the body.

This whole theory of hepatic glycogeny, of which we have thus rapidly sketched a summary, is set forth in the lectures of M. Bernard with an admirable clearness ; and the numerous experiments, varied in a thousand ways, with which he supports each proposition, are so exactly described that in their perusal, the reader can hardly feel regret at not having witnessed these experiments. The perusal leaves an entire conviction in the mind, and especially impresses on it a profound admiration of the eminently philosophic spirit shown by the author, in whom we are at a loss which we ought the most to praise, the elevation of his views, his modesty of character, his talent for investigation, or his sagacity as a discoverer. M. Bernard knows, as well as any other physiologist, how to enter the lofty regions of hypothesis and induction ; but he displays the rare and difficult merits of laying hold on truth in preference to theories and the offspring of his imagination ; and of rejecting these latter when



contradicted by careful experimentation. He avails himself of them in no other way than as guides in the midst of his researches, and he abandons them with the same facility that he creates them till he is conducted to positive truth. But that which we cannot too much admire is the scrupulous care which the professor takes, in his investigations, to distinguish what is demonstrated truth, from what is probable, or even infinitely probable. The mind is singularly at ease in reading, from the fact of its experiencing no necessity of guarding against being led astray by specious hypothesis. From how many errors would science be freed, if so much sound philosophy generally presided over its researches.

The discovery of the glycogeny of the liver, is clearly sufficient to render illustrious the name of any physiologist ; but this is however only one of the titles of our author to the esteem and gratitude of the whole scientific world. This discovery for which he is entitled to our special thanks, clearly shows how the science of physiology may be elevated to a level with the exact and positive sciences ; and this, also, leads us ardently to desire to see him throwing the same light on other points in this beautiful science, which he has already thrown on the glycogenic function of the liver. \*

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ART. II.—*The Terebinthinate Poison* ; translated by M. MORTON DOWLER, M.D., New Orleans.

THE toxical properties of the exhalation from newly painted houses is within the knowledge of all; and fatal effects have been recorded as the result of sleeping in newly painted apartments in which there has been a want of ventilation. This poison becomes a subject of serious importance, from the fact that all classes of population, especially in large towns and cities, are at one time or other more or less exposed to it. The constant erection of new buildings, and the annual re-painting necessary to those already erected, render the odor of the fresh painted house, a thing of very general inhalation. Our own city of New Orleans towards the close of the summer season literally smells of paint.

This poison has been of late the subject of much discussion in the Medical Journals of Paris, with a view of determining the particular agency by which the toxical effect is produced. The experiments of M. Mailhe, go directly to show that this effect is not produced by lead,—

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\* The above summary so commendatory to M. Bernard is from the able pen of M. Amédée Latour, Editor of *L'Union Médicale*.—Ed. N. O. Med. and Surg. Jour.

the substance generally accused—but that on the contrary, it is entirely a fixed material in the paint of which it forms the base. Further, M. Pardieu (*Art. Plumb. Dict. d'Hyg. Pub.*) has shown that the noxious effects of fresh paint, must be alone referred to the turpentine it contains; and his observations accord with those of MM. Adelon and Chevalier, previously made public.

M. Marchal de Calvi has in *L'Union Médicale*, taken up the subject at great length, beginning in the number for the 13th of March 1856, and resuming the subject in several succeeding numbers. Having read the several articles of M. M. Calvi, we may make the following general deductions as representing his views on this subject, space not permitting us to do more :

1. That from actual personal occurrences, the deleterious nature of fresh paint exhalations, in the absence of free ventilation, is well established.

2. That the morbid manifestations in such cases, have nothing in common with those resulting from lead.

3. That in numerous carefully conducted experiments, performed on the inferior animals, (dog, hog, &c.) which he exposed to the exhalation from fresh paint, under such concentration as to destroy life, not the remotest trace of lead existed in the air thus breathed.

4. That in the absence of all lead, the turpentine exhalation alone, when inhaled, produced toxical effects in every respect corresponding with those produced by fresh paint.

5. That absolute contact alone can produce real lead disease from the presence of fresh paint.

6. That the assumption that lead is either exhaled from fresh paint, or that that metal has by chemical reaction imparted the toxical properties to the turpentine, is wholly disproven by the independent action of turpentine.

7. That the turpentine acts as a strictly toxical agent, and does not require in order to produce its action as such, that it should produce simply asphyxia by substitution.

These are the equivalents to MM. Calvi's principal conclusions. They are calculated to produce some surprise amongst the "Rosin Heels," as our Piney Woods fellow citizens are quaintly called—who for hundreds of miles revel in the terebinthinate odor, in a land flowing with tar, pitch, rosin and turpentine; and it will quite astound our Crescent City people who so devotedly affect the odor of the "Piney Woods."

We would suggest to M. Marchal that it is not improbable that the vapors of all essential oils are poisonous, as when these oils are taken

into the stomach in large quantities, they are poisonous; and it is quite probable that it is unsafe to dispense with free ventilation amidst the concentrated fumes of any of them, whether exhaling from an admixture of the white lead on the walls of a room, or from walls independently anointed with the volatile oil. Reasoning *à priori*, we would not like to run the risk of sleeping in such an atmosphere, though the oil of peppermint, or of sassafras, or of cloves, had taken the place of the oil of turpentine.

Since the reception of the above article, a brief report of M. Marchal's account of the poisonous properties of the vapor of turpentine, (in the Br. & For. Med. Chir. Rev., for April, 1856) has been received, as follows :

M. Marchal de Calvi related to the Academy of Sciences in Paris, on December 10th, the case of a woman who had lived for some days in a newly painted room. The first symptom she experienced was colic, but soon she became prostrated; the face was deadly pale, the eyes sunken, the lips could scarcely be moved, the breath was cold, the voice was lost, the limbs were cold, the pulse almost imperceptible, the countenance anxious. The intellect, however, remained perfect, and the patient felt as if she were about to die. Under the use of external and internal stimulants she rallied, but did not perfectly recover for a month.

Some experiments made by M. Marchal in conjunction with M. Mialhe, tend to show that vapour of turpentine produces poisonous effects on men and animals. The conclusions at which the author arrives, are: 1. That white lead is fixed in paint, and is in no way concerned in the production of the poisonous symptoms arising from inhabiting a newly-painted room. 2. These symptoms are due to the vapour of turpentine. 3. The danger is the same whether the base of the paint be lead or zinc. 4. There is danger of poisoning by turpentine so long as the paint is not perfectly dry, and it is safest not to inhabit a newly-painted room until all smell has disappeared. 5. Poisoning by turpentine enters into the same category as poisoning by the emanations from flowers. 6. The emanations from flowers act in two ways—idiosyncratically or as poisons. 7. The action of turpentine is chiefly depressing. 8. Energetic stimulation constitutes the best treatment. The peristaltic action of the bowels should be excited. The two last observations, being formed on sufficient data, are not absolute.—*Gazette Médicale de Paris*, December 20th, 1855.

### ART. III. *Intermarriage with Kindred—Case of Monstrosity* : Translated by M. MORTON DOWLER, M. D.

AT the sitting of the Academy of Medicine of Paris, of May 13th, 1856, a letter was read from M. le docteur Rilliet of Geneva, contain-



ing an exposition of researches made by him in relation to the influence produced by consanguinity on the issue of marriage. The following is the substance of the letter : There have been within his observation a great number of marriages at Geneva amongst blood relatives, and the attention of the author has been for many years directed to the melancholy consequences thus originating with respect to the soundness and viability of the children. The results which he has observed as occurring from these unions are ; 1st. the absence of conception ; 2d. delayed conception ; 3d. abortion ; 4th. monstrosities ; 5th. the production of imperfect moral and physical constitutions ; 6th. organ-ism especially liable to diseases of the nervous system, the diseases being the following, and in the following order of frequency: epilepsy, imbecility or idiocy, mute-deafness, paralysis, various cerebral diseases ; 7th. lymphatic subjects predisposed to the diseases which bring about the scrofulo-tuberculous diathesis ; 8th. a greater proportion of mortality in infantile life than in other marriages ; 9th. subjects that even after passing the period of infancy, are less apt than others to resist disease and death. To the general rule here laid down there are exceptions, owing sometimes to the sound health of the descendants, at others to the dynamic conditions in which the parents are found to exist at the period of sexual union : Thus, 1st. the children rarely *all* suffer from the untoward influence ; 2d. some are smitten while others are spared ; 3d. those that are affected hardly ever suffer in the same manner, in the same family, that is to say, one is epileptic, whilst another is deaf-mute, etc.

*Monstrosity*.—At the same sitting M. Depaul presented the cadaver of a new-born infant which exhibited a variety of the *Cyclops* monstrosity. A single piece exhibited the frontal bone. A single orbit, in the median line, contained an eye-ball with the sclerotica and cornea ; and vestiges of four eyelids were visible. The nose was wanting, and the mouth, which was rudimentary, was reduced to a small orifice. Beyond this there were no vices of conformation.—*L'Union Médicale*, May, 1856.

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ART. IV.—On *Tracheotomy in Croup*; by Dr. G. PASSAVANT of Frankfort. Translated from *L'Union Méd.*, of May, 1856 : by M. MORTON DOWLER, M.D., New Orleans.

THE distinguished Dr. Passavant is an advocate of this operation. He however observes that we must not expect more from it than we can give. It can only relieve a single condition in the disease, namely, threatened asphyxia from impermeability of the glottis, but it cannot

modify the fundamental evolution of the disease. There is no manner of doubt that in this affection the larynx may become more or less completely closed, by false membrane—which alone never produces this result, unless by the tumefaction of its internal parietes; and more generally by an increase of these two causes. M. Passavant has examined the larynx of a child that died of Croup, in which the internal membrane was coated with a thin false membrane, and so tumefied that a very small sound could not be passed without force. It is often very difficult, and even impossible to determine whether the threatened asphyxia proceeds from the larynx, or from the lungs. The practitioner who is opposed to the operation is apt to recognize a pulmonary affection, whilst he who is in favor of it, will allow himself to decide by the peculiar hissing sound determined by the passage of the air through the larynx, and by the threatened asphyxia. It is never too late to operate so long as the child respires. [I have myself attended to a case in which the child ceased to respire while I performed the operation, and that nevertheless began to breathe sometime after the opening of the trachea; though the child died three days afterwards. In a case of obscure croup, in its active stage, I have seen Professor Rigard perform catheterism of the larynx, in order to decide the applicability of the operation. *French translated from the German.*] M. Passavant has performed this operation nine times, with success in four cases. The more advanced the age is, the more favorable the result, the youngest that recovered being 4 years and nine months, and all the fatal cases, with the exception of one, were below this age.

Moreover, this eminent practitioner relates some trials that he has begun to make with chloroform. He had observed that in pneumonia, under the influence of this agent when inhaled, the viscid expectoration was discharged, enveloped as it were, in a liquid exudation, and from that fact he hoped by the use of chloroform, to be enabled to facilitate the detachment of the false membrane, in croup. At intervals of greater or less length, chloroform was inspired for about ten minutes, but without producing sleep. The result was surprising. Strips of false membrane, *many centimetres* in length, were expectorated with violent efforts at coughing. These observations, however, are not sufficiently numerous to enable him to proceed definitively on the value of this treatment. It cannot yet be determined whether it merely favors the expulsion of the exuded membrane, or exercises a favorable influence on the mass of the blood. It is probable that it has no action on the swelling of the larynx, in which tracheotomy is indicated.—*Archive Physiol. heilk., t. xiv, No 4.*

ART. V—*On Wounds of the Brain—Read before the St. Louis Medical Society.* By MONTROSE A. Pallen, M. D.

MR. PRESIDENT—

There is at present in the St. Louis Hospital, a nurse, who seven years ago received a gun-shot wound in the head. The ball entered the right anterior superior zygomatic space, traversed the cerebrum and cerebellum, and made its exit near the middle of the left lambdoidal suture, the greater arc of the wound of exit being in the parietal bone. The cause of my stating that it passed through the cerebellum, is owing to two reasons: Firstly, its anatomical situation; Secondly, the want of co-ordination of motion on the side of the hole of exit, and paralysis, at least partial, existing on that side, (*i. e.*, of exit of ball.) What is most remarkable in this case is, that he sees, and never lost in the least degree the power of vision in the left eye, that he was almost totally hemiplegic on the left side, and not effected on the right; but at one time was completely, and is now, partially amaurotic, of the right eye. There is a stellated, depressed fracture at both orifices of the wound, completely cicatrized. As to the pathology of this case I have nothing at present to state, having described it as an example of the many which recover after having received wounds of the brain. The wounds of the brain and its membranes, are rare in civil practice, but according to Guthrie, and other distinguished military surgeons, they constitute about 2-7ths of the cases met with in their practice. The injury inflicted may vary from a slight denudation to a complete disintegration, and escape of large portions of both cortical and medullary substances.

The most frequent injuries or wounds of the brain seen in this country, produce laceration of cerebral substance, either directly under the seat of a depressed fracture, or immediately opposite, constituting what is called *contre coup* or *counter stroke*; an example of which, Mr. President, occurred in your practice, not more than half a year ago. In the case referred to, the man was thrown from his horse, striking his head upon, or in the region of the right supra-orbit; extravasation of blood in large quantities ensued, but there was no fracture. The case terminated unfavorably, and a post-mortem examination being made, a fissure was discovered a little to the left, upon the base of the cranium, extending from the posterior portion of the basilar process of the occipital bone to the body of the sphenoid bone, and there was a corresponding fissure or rupture in the cerebrum, *not in the cerebellum*. Although this case terminated fatally, it must not be taken as a type, for experience shows us, that a very large majority of cases recover, and with no very untoward symptoms, and that the brain cicatrizes more readily and more frequently than any other viscus. Spicula of bone, splinters of wood, bullets, in fact almost every thing capable of penetrating the brain, have been found in the brains of subjects. Henner states, that he has seen five cases in which bullets were found embedded in the brain. Cunningham relates similar cases, and Dr. O'Callahan has recorded the case of an officer who lived "for about seven years with the breech of a fowling-piece, weighing three ounces, lodged in the forehead; the right hemisphere of the brain resting on the flat part, from which it was only separated by a



false membrane". Erichsen says, "that wounds of the brain and its membranes may prove fatal, either at once by injury of the respiratory tract, in the course of a few hours by the continuance of the shock, by the extravasation of blood within the cranium; at a later period by the occurrence of encephalitis and its consequences; or more remotely, still, by the supervention of paralysis and other ulterior effects of injury of the nervous system." We see by this that he does not, in the least degree, make any allowance for the recovery of any case in which the cerebral substance has been wounded. An assertion, as we shall presently show, altogether too exclusive. By consulting the archives of the Sydenham Society, and also those of the French Academy of Surgery, we find accounts of a great number of cases recovering, and in such a ratio as appears almost incredible, and is really astounding. According to the records of the Sydenham Society, seven out of every ten recover; according to the French Academy of Surgery, six out of every ten recover. These statistics show the enormous proportion of 65 per cent. of recoveries, notwithstanding the high authority of Erichsen to the contrary.

Again, Erichsen says, "if a foreign body have penetrated deeply into the brain, and have got beyond the limits of the external wound, it would be perhaps more dangerous to trephine the skull on the chance of reaching it, or in any other way to go in search of it, than to leave it where it is."

If one, or perhaps two cases can be produced to show that the rule does not hold good in all cases, then we think that it may not hold good in any one.

Thus, M. Souré relates a case of a "young woman, aged 22 years, who struck her head against the wall, bruising the middle and upper portions of the occipital bone; the blow was followed by no severe symptoms for about two months and a half, with the exception of a slight pain in the region of contusion; but, at last fever came on, with pains all over her head and in her abdomen." M. Souré then ordered bleeding which relieved her temporarily, but at the expiration of four months, the symptoms increasing he was led to believe that a foreign body of some sort might exist, so he trepanned, and found a "dark hard tumor about the size of a tennis ball, looking very much like clotted blood." This tumor was removed, the symptoms became manifestly better, and in three months the woman was completely well.

Frequently there results abscess in the brain, as a consequence upon injury of any sort, the treatment of which is hazardous in the extreme, the diagnosis very difficult, and the prognosis unfavorable. The greatest diagnosis on record, and the most hazardous operation in the annals of surgery, was that of abscess of the brain, into which Dupuytren plunged his fearless bistoury and evacuated the pus. Yet this is not the first one.—Jean Louis Petit relates a case of "a child, 9 years old, which fell from a height and became insensible, wounding the forehead about  $1\frac{1}{2}$  inches above the right eye, sufficiently bare to allow of the introduction of his finger; he felt that the bone was fractured and depressed, which obliged him to make a crucial incision, large enough to expose the whole fracture and provide room for the application of

the trepan." He postponed this part, however until the following day, on account of hemorrhage; almost immediately as soon as he had completed the dressing, the child recovered his senses; he was bled several times. On applying the trepan, M. Petit found no blood effused under the skull; he raised the depressed portions of bone, removed such as were entirely detached, and cut away such irregularities as might have injured the dura mater. No ill symptoms ensued during the first days, but on the night of the fifth day a little fever came on; the patient was restless, hot, and very thirsty, which led to a repetition of the bleeding in the morning. On the following day the wound was drier than ordinary, the dura mater appeared brownish, a little rounded out, and resisting pressure with the finger, which led M. Petit to think that some fluid was effused beneath it. It was opened, and an abscess discovered, which had formed in the brain, whence issued a teaspoonful of brown foetid serum; the opening was enlarged as much as compatible with prudence. The first discharge did not dispel the symptoms; on the contrary, his patient passed a very restless night, talking and grinding his teeth, and the pulse was contracted and irregular; in the morning, however, the dressings were found quite wet; this continued for two days, but on the 11th day after the accident all these symptoms suddenly ceased. M. Petit found, as the cause of this that the dressings were full of foetid pus, and some flocculi of cerebral matter followed the discharge; the portions of the membrane which had become gangrenous were separated and the patient was well in two months. There are many accounts of abscess occurring in the brain, as the result of wound. They occur either encysted or non-encysted, the former variety being most frequent; they occur according to Lallemand and Bouillaud as "a collection of pus in a pouch, the walls of which are very much thickened and indurated, presenting a fibroid appearance." But more modern authority does not recognize this definition, but declares it to be a rounded cavity, irregularly hollowed out of the parenchyma of the brain; its walls to be composed of suppurating cerebral tissue, sloughing shreds of which, soaked in pus, hang inward into the cavity, while all round the brain to be in a state of red softening, the pus contained to be of a greenish color, very thick, and exhaling a very foetid phosphorescent odor. These abscesses vary in size, being sometimes not more than three lines in length, or they may occupy the whole of one hemisphere.

Frequently these abscesses produce ulceration in the surrounding tissue, extending even through the cranium, as in encephalic otorrhœa. The pus passing from within the skull, entering the tympanum, and destroying the membrana tympani, makes its exit through the meatus auditorius externus; or the matter may force its way through the cribriform plate of the ethmoid bone, into the labyrinth and cavities of the nose; or the pus may force its way through the bony case, and be discharged directly outwards. These abscesses may rupture into the ventricles, when so doing, they prove rapidly fatal, death supervening almost instantaneously, either through coma, or by the nervous shock so produced. When the brain is thus destroyed, the nerve-fibres which are involved become atrophied; and, after repeated attacks of inflammation, the whole brain becomes tough and wasted.

The various wounds of the brain, either incised, punctured, contused, gun-shot and lacerated, all heal by different processes. Incised and punctured wounds, when clean and small, heal by adhesion. Lacerations and contusions are repaired by the gradual changes which the effused blood undergoes, which gradually changes its color from a dark red to a prune juice color, thence to a light red, thence to a yellowish turbid fluid, thence to a clear serum; in which last is discovered exudation, corpuscles and fibrillæ. While this process is going on, the surrounding tissue which is swollen and inflamed, pours out a plasma, which forms a cyst, of a gradually indurating character, contracting upon itself, and to which are attached the fibrillæ, above mentioned. Thus a complete fibrinous capsule is formed which is converted into a true cicatrix. This same process is observed in cerebral apoplexy. When any of the cerebral substance is entirely lost, as in penetrating and punctured wounds which are large, the cavity is filled up by granulation, and adheres to the cicatrix, which supplies the place of the cerebral membranes and bone. The space within the cranium is replaced by the ventricle being enlarged, in direct proportion to the quantity of substance lost. Frequently, hernia or fungus cerebri is the consequence of a too exuberant exhibition of granulation. \* \* \*

Thus we see that wounds of the brain are not so fatal as is generally supposed, and as for the treatment, a mild antiphlogistic one has been found to be all that is requisite, with topical application: of either honey of roses or cold water.—*St. Louis Medical and Surgical Journal.*

ART. VI. *Compression of the Brain from Effusion—Trepanning;—Recovery. Reported to the St. Joseph Medical Society, April 1st, 1856.* By G. C. CATLETT, M. D.

ON the 20th of December, 1854, Mr. W——, while engaged in a fight, received on his head a severe blow with a stick, that would have measured at least two inches and a half in circumference at the largest extremity. The blow terminated the affray, having prostrated W——. There soon followed syncope, nausea and vomiting. After recovering from these symptoms somewhat, he re-mounted his horse and rode three miles to his residence. On reaching home, he took his bed, complaining of great oppression and nausea. Soon vomiting re-occurred, and laborious and stertorous breathing rapidly supervened. His wife becoming alarmed, sent in haste for Dr. Knode—upon his arrival about four hours after the accident, and after ascertaining the character of the case, he had the late Dr. Sykes called. W—— received the stroke about 12 o'clock, M. When I arrived about six hours after, Drs. Knode and Sykes had cut down upon the skull, making a triangular incision through that portion of the scalp which had suffered from the blow, exposing a black and badly contused scalp. That portion of the parietal bone, from the temporal ridge to the inferior or squamous border, had received the force of the blow. There was no perceptible fracture



of the external table. The patient was not expected to survive the night from the overwhelming compression of the brain. Trephining was immediately and carefully performed on the parietal bone near the temporal ridge. The internal table was not fractured. The trephining revealed a very large and dense clot of blood, measuring three-fourths of an inch thick, which must have proceeded from a rupture of one of the branches of the meningia magna arteries. As much of the clot as could be removed was carefully taken away by my fingers and by the handle of a small spoon. The respiration became more frequent and not so stertorous; the pulse more distinct and full; iris capable of being slightly excited. In fact, the removal of the clot made a perceptible though unsatisfactory change in his condition.

The incisions in the scalp were retained open; warm, wet, and often repeated cloths were applied during the night to increase the fluidity of the effused blood and to facilitate its exit from the cranium, and active cathartics were administered. His pulse never indicated a want of depletion.

On the next day, the 21st, there was no very great change; still unconscious; obstinate constipation; whole nervous system dormant. He continued in this state two days, except that his bowels were freely evacuated in the mean time. He was kept on unstimulating and farinaceous diet.

The 24th—pupils now influenced by light; they still remain dilated. He talked incoherently; would attempt to answer questions, but would forget what was asked him; said a horse had kicked him, and could not recognize familiar faces. From this time, by strict attention to his bowels and regimen, and continued application of cold cloths to his head, he slowly recovered from the dangerous compression under which he had been laboring.

Not anticipating any further difficulty, we thought nature would complete in her own time and in her own way the recovery. After some time had elapsed (three or four weeks,) unhealthy granulations sprung up from the edges of the wound or incisions in the scalp—they were suppressed.

A short time after that, the patient came to my office for advice in consequence of the great quantity of matter, as he said, that came from his wound. Upon examining it I found it to be a thin pale ichorous pus, and immediately suspected the cause. Guiding a pair of forceps upon the end of my finger, I introduced it into the trephine hole, and detecting a loose bone, I extracted a portion of both tables corresponding with the circle of the trephine hole. Upon further examination with a probe, I found the posterior and inferior portion of the parietal bone also carious and rough; the superior edge of the squamous portion of the temporal bone could be distinctly felt, the parietal bone having been separated from it. Upon consultation with Dr. Knobe, we determined to give the carious bones time to be detached from the surrounding sound and lining bones, before any attempt be made to remove them. About two months from this time the dead bones having been completely detached and loose, by dividing it with a saw we removed a large portion of the posterior and inferior inner table of the parietal bone;

the corresponding portion of the external table having been removed by suppuration. The portion of the bone removed was an inch and a half wide by about two inches long. After the extraction of this bone the patient recovered his health rapidly.

*Comment on the Case.*—Mr. W—— is deeply indebted to the art of surgery, and also to the strength and vigor of his constitution ; and last, but not least, he is under the most lasting obligation to the system of absorbent vessels for their prompt and efficient action, in assisting in the removal of the effused blood and the carious bones.—*St. Louis Med. and Surg. Jour.*

ART. VII. *The rate of Pulsation and Respiration in Phthisis, and its relation to the period of the Day, Posture, Temperature, &c.*

By EDWARD SMITH, M. D., L. L. B., &c. Assistant Physician to the Hospital for Consumption, Brompton.

IN the April number (1856) of the Br. & For. Med. Chir. Rev. Dr. Smith concludes a long, elaborate statistical paper, having the title named above, of which the following is a summary :

1. The average rate of pulsation was 95.3, and of respiration 23 per minute. The extremes were 55 and 166 pulsations, and 11 and 43 respirations.

2. The rate of pulsation was not dependent upon the stage or progress of the disease, or the degree in which the system had become implicated,

3. The more extensively diseased or advanced cases of disease, differed from the others in that fewer of them had a non-excitable temperament, they had a less vital capacity, and a more frequent average rate of pulsation and respiration, with wider extremes.

4. The weekly average variations in respiration were from 2 to 5 respirations, and at the period of the year the rate of respiration declined, whilst that of pulsation increased.

There is a general relationship between frequency of respiration and extent of disease, frequency of pulsation, short stature, lessened vital capacity, and excitable temperament ; but there are many exceptions.

5. The average rate of both pulsation and respiration is greater at 4 P. M. than at 8 A. M., to the extent of 7.2 pulsations and 1.8 respirations, and the extremes are greater. The evening excess of pulsation was usually associated with extent of lung disease, frequency of pulsation and temperature, but not with activity of body. Probably there is some relation between the evening excess of respiration and frequency of respiration ; but there is no indisputable relation between it and excitability of temperament, lessened vital capacity, frequency of pulsation, extent of disease, or height of body. The evening excess of respiration varied much from week to week, and more particularly from day to day, in which latter a bare majority only had the evening excess.

Posture of body affects the rate of both functions so as to increase it in the sitting and still more in the standing posture. The total average increase in pulsation was  $8\frac{1}{2}$  in the sitting, and a further  $8\frac{1}{2}$  in the standing posture. In the morning the difference was 10 pulsations in each position, whilst in the evening it was 7 in each position. The rate of pulsation in each posture was thus greater in the evening, but the difference from posture was less, and chiefly in the standing posture.—The extremes in each posture were less widely apart. The variation in the increase from posture was not dependent upon age, temperament, amount of lung disease, frequency of pulsation, or stature.

The exceptions to the increase were most numerous in the sitting and standing postures, and more particularly in the evening.

The rate in the sitting posture is the mean pulsation in all postures.

The average increase of respiration in the sitting posture was 1, and in the standing 4; and only three-fifths of the observations showed the excess in the sitting, and less than half in the standing postures. Thus, the effect of posture is less, and is less constant in respiration than in pulsation. It was increased in the evening, but most in the lying posture; and the increase was the most constant in the lying posture, whilst in the standing posture the constancy was greater than the amount of the excess. The cases differed much in the amount of the excess, and in some it amounted to even 19 respirations.

6. The influence of increasing temperature was to increase the dryness of the air and the rate of pulsation, and to lessen the rate of respiration. Whilst the temperature was externally under  $60^{\circ}$ , and internally under  $64^{\circ}$ , the rate of pulsation was not greatly influenced; but when above this the influence was great, disproportionately to the number of degrees. Those persons who do not bear heat well have great increase of pulsation from heat, and those who bear it well have not a similar increase. Falling temperature lowers pulsation and increases respiration; but if it succeed to an elevated condition, the functions do not soon attain to the same state as with the same temperature previous to the elevation.

The rate of respiration is manifestly influenced by the dryness of the air, and is inversely as the dryness.

7. The ratio of the respiration in the pulse was 1:4.1; but in four-fifths of the cases it was on the average less than 1:3 and more than 1:5. It lessened as the temperature or the disease progressed, and was due to the rate of respiration rather than to that of pulsation.—Probably a diminution of the ratio may be a test of the progress of the disease. It was scarcely different at 8 A. M. and 4 P. M., but was lessened in the sitting, and still more in the standing postures. Thus the erect posture, muscular exertion, and wear and tear, lessen the ratio of the two functions.

*Deductions or Inferences.*—1. There is no rate of pulsation or respiration indicative of phthisis, or of any stage of phthisis; but whilst the rate of both is on the average about that of health, it may be, in any stage, much lower than that of health.



2. In cases of phthisis, whether greatly advanced or not, there is as much food taken, on the average, as would have been in health, with the same degree of exertion; and hence it may be inferred that the appetite and digestion are also good; yet the weight of the body diminishes. Hence the food must be consumed more rapidly than in health, or be less perfectly assimilated and deposited, or the material having been only deposited, it is more quickly removed.

3. In the more advanced cases, less air is admitted into the lungs, and the rapidity of both respiration and pulsation is greater, and there are wider extremes in the rate. Thus the changes of aëration and assimilation must be less perfectly performed, whilst all the functions in the body are more frequently and rapidly performed, and the wear and tear probably greater.

4. It is probable that one sound and one extensively diseased lung is less injurious than both lungs diseased to a much less extent; and that moderate consolidation and destruction together is worse than more extensive consolidation alone, and the more so still if both lungs are moderately affected.

5. At 4 P. M., all the functions are more frequently performed than at 8 A. M., and consequently more exhaustion will follow. This increase is chiefly due to food, temperature, sun-light, and exertion; and it is more so when the lung disease is considerable. The proportionate diminution in the respiratory function is greater in the evening.

6. The effect of posture is much greater than in health (Dr. Guy's observations in reference to the latter being accepted;) but chiefly in the morning, and in the influence of the sitting over the lying posture. In health, the excess in the sitting posture was about  $3\frac{1}{2}$ , and in the standing over the sitting nearly 9; whilst in phthisis it was 7 in each in the evening, and 10 in each in the morning. Hence the sitting and standing posture in phthisis call for more expenditure of power, and tend to produce more subsequent exhaustion, than in health; and the lying posture would save the strength. The effect upon respiration is much less, and especially in the standing posture. Hence the latter posture further tends to exhaust the system by increasing the blood-motion and not also the entrance of air into the system.

7. High temperature, with the accompaniment of dry air, also tends to rapid exhaustion by greatly increasing the blood-motion and greatly lessening the introduction of air; and, on the contrary, low temperature and moisture increase the aërication of the blood, and lessen the rapidity of the blood-current. Hence in phthisis, a moderately cool and moist air is the most conducive to health, and the hot summer season must induce exhaustion.

8. No one should be sent to a hotter climate who bears heat badly; but if he bear it well, and need a milder air, he will not be more exhausted, and particularly if the air be rather moist.

ART. VIII. *Laceration of the Corneæ of Both Eyes, during a Convulsion.* Reported by J. W. MCKINNEY, M. D., of New Albany, Ill.

THE patient was a child, three years old, step-daughter to Robert Richey. For eight or ten days preceding my first visit, the child had suffered from tertian intermittent, of a mild form, scarcely attracting the attention of the parents—not sufficiently so to resort to medication. On the day previous to my being called, it had a light chill, followed by an exacerbation, which passed off in a few hours, and in a short time it seemed as cheerful as usual.

*Saturday Morning, April 19th, 1856.*—I was summoned by the step-father to see the case, who stated, that the child, soon after awaking from sleep in the morning, was attacked with convulsions. On visiting the patient, I found it lying on the bed with its head and shoulders elevated by means of pillows, and in a state of deep coma. The eyes were closed, the pulse quick and frequent, breathing somewhat labored, head hot, while the general heat of the surface was little, if any, above that of the natural temperature. Slight spasmodic jerking of the upper extremities still were present, which readily subsided on the application of cold water to the head, with mustard drafts to the wrists and ankles.

There was nothing peculiar in the symptoms, beyond that of ordinary convulsions of children, to attract my attention, except the coma, which I thought to be of a deeper lethargic character than was usual in such cases. I accordingly ordered a continuation of refrigerants to the head and drafts to the extremities, so long as the head remained preternaturally hot; and prescribed a brisk cathartic of calomel, 10 grs.; turpentine, thirty drops; mixed with a dessert-spoonful of castor oil; to be administered so soon as the patient was sufficiently recovered to swallow.

On the morning of the 20th, when again visiting the patient, I learned that the cathartic dose had been given, which acted freely during the night, and that there had been no return of convulsions; but that the deep coma had continued, and it was with difficulty the patient could be aroused so as to swallow anything when put into its mouth.

On raising the upper lids of the eyes (which had been kept constantly closed since the convulsion the previous morning,) I discovered a laceration of the corneæ of both eyes.

The lacerations were both transverse, pointing to the outer and inner canthus, and just below the lower border of the pupils, presenting smooth edges as though they had been cut by a sharp instrument. The rent in the left eye, extended entirely across the corneæ; while that of the right, extended from the inner border of the corneæ, or that next the greater canthus, only about two-thirds across its diameter, in the direction just stated.

The eyes were slightly flattened in front, from the escape of a portion of the aqueous humor through the rent, which imparted a dim contracted appearance to the sound portions of the corneæ.

Acute inflammation of the conjunctiva of the left eye was set up, radiating from the two extreme points of the laceration.

Together with all this, there was complete paralysis of the left arm—an evidence of a more serious lesion in the brain and nerve centre. I stated to the parents my apprehensions of the existence of this serious lesion ; while exhibiting to them the rent in the visual organs, which till now they were not aware of.

With a view to palliate and sustain for a time the already sinking energies, I prescribed calomel, 1 gr. ; quinine, 2 grs. ; every four hours, till six doses were given, provided the patient could be had to swallow ; and ordered lead-water and laudanum to be applied to the eyes ; blisters to the temples ; volatile liniment to the back of the neck and along the spine ; with cold water to the head, whenever the surface was preternaturally hot. This treatment was persevered in with such alterations as the condition or the patient seemed to suggest from time to time, but all to no permanent good. The little unfortunate sufferer continued gradually to sink into a deep and deeper lethargy, which ended in a final cessation of all the functions on the fourth day from the convulsive struggle.

A few hours previous to death, the remaining portion of the aqueous humor of the left eye flowed out through the rent in the cornea.

I sought a *post-mortem* examination of the brain, but did not obtain permission, which I very much regret.—*North West. Med. and Surg. Jour.*

ART. IX. *Remarks on the United States Standard of Specific Gravity for Indicating the Strength of Alcohol, and on the Official Hydrometer. Reaction of Iodine with the Alkaloids. Alcohol in Chloroform.*

MR. W. PROCTER, JR.—Dear Sir : My attention has been directed to an article on the strength of certain acids and alcohol, by A. P. Sharp, published in the Proceedings of the American Pharmaceutical Association. The instruments in use here, I think, are not constructed by Tralle's tables, as published in Ure's Dictionary of Arts. In view of the uncertainty of strength of alcohol as an article of commerce, I think you would do a great service to purchasers and those who have occasion to use the article, if you would publish in your Journal the U. S. standard of specific gravity for such strengths of alcohol as are in common use. \* \* \* \* \*

If there be any standard or rule based on the action of Congress, by which, when the temperature and the specific gravity are known, the per cent. of commercial alcohol can be known, I think it will be valuable information.

A table containing such information must, of course, in addition to the specific gravity of each per cent. of alcohol, state whether the per cent. be in weight or in measure or volume. I am quite sure that the table in the U. S. Dispensatory under the head of alcohol, is not the standard by which the distillers' instruments here are made. I this day



weighed a sample of alcohol, which I bought for eighty per cent., at the temperature of 60°. It is 0.834. Now, by the U. S. Dispensatory, it is nearly 85 per cent. by weight, and by Ure's tables nearly 90 per cent. by measure, of alcohol.

I think it would be desirable to know the U. S. Custom House standard for first, second, third and fourth proof spirits, and what is meant by so much above, or below proof; in other words, what are the respective specific gravities of these spirits.

If there be no standard based on the action of Congress, perhaps the usage of those who make the hydrometers for the Custom House could be obtained and published. At all events, it seems to be very desirable for me, if I am about to purchase a pipe of brandy of a given proof, or a barrel of alcohol of any given per cent., in a distant part of the country, to know what specific gravity I am entitled to receive. \* \*

Yours respectfully,

CHARLES MEAD.

[On receiving the above letter, although we had at command Prof. McCullogh's valuable "Report," we preferred to refer it to Mr. Sharp, of Baltimore, whose judicious remarks before the Association had called it forth.—EDITOR.]

BALTIMORE, April 4th, 1856.

MR. W. PROCTER, Jr.

DEAR SIR—In reply to the inquiry whether there is a United States standard for estimating the strength of spirits, I will say there is a very complete and reliable calculation made by Prof. R. S. McCullogh, and under the superintendence of Prof. A. D. Bache, U. S. Coast Survey Office.

The title of the two works published by order of Congress are as follows: "Report of the computation of the Manual of Tables to be used with the Hydrometer," and the "Manual for Inspector of Spirits." The latter is divided into three parts, as follows: A table showing the true per cent., by volume, of any spirits or alcohol varying in temperature from 20 to 100° Fahrenheit. The second part is to tell the true value when the quantity or volume of the spirits is known, but the temperature being above or below the standard, 60° F. The third table is a combination of the other two.

The standard of proof is fifty per cent. by volume or measure, that is to say, one pint of absolute alcohol and one pint of water make proof spirits, which is fifteen degrees weaker than the London proof; or by Sykes' Hydrometer, specific gravity 936. Second proof is five degrees stronger, 2½ per cent. alcohol, and has a specific gravity of 931. Third proof 10 degrees stronger, 5½ per cent. alcohol, specific gravity 925. Fourth proof 15 degrees above proof, 58 per cent. alcohol, specific gravity 920, and is London proof.

The best instrument, the cheapest, and the one the United States have adopted for all the Custom Houses as their standard for testing the strength of spirits from one to 100 per cent., is Gay Lussac, or Tralle's Hydrometer or Alcoholimeter, made by Luhme & Co., and Greiner of Berlin. They have been tested by the most accurate balances, and found the most reliable, as the common ones, of brass, copper and silver, are liable to oxydation and corrosion, which of course affects

the accuracy. They are made with a thermometer in the bulb, the degrees of which either correspond with the graduation of the instrument, or a Fahrenheit. If the former, and the mercury stands at 0, and the stem indicates 80 per cent. alcohol, that is the true per cent. If it should stand at 1 degree below 0, the true per cent. would be 81, as the alcohol would be too cold; and if at one degree above, the true per cent. would be 79, as it would be too warm. For every degree above or below, one per cent. is to be added or subtracted.

If they have the Fahrenheit scale in the bulb, every five degrees above or below 60° makes a difference of one per cent., using the same rule as above, adding when below and subtracting when above 60°.

This instrument I think of great importance to pharmacentists. I forgot to mention that they usually have two scales on them—Richter's scale, which shows per cent. of alcohol by weight, and Trall's, which as I said before, indicates the per cent. by volume.

Yours truly,

A. P. SHARP.\*

*The Reaction of Iodine with the Alkaloids.* By ROBERT F. FAIRTHORNE.—When the liquor iodinii comp. of the U. S. Pharmacopœia is added to the solution of sulphate of morphia, U. S. P., a copious reddish-brown precipitate is immediately produced. Laudanum treated in the same way produced a similar precipitate. These precipitates are soluble in alcohol. Quinia, strychnia, veratria, aconitia and atropia, dissolved in water by the addition of an acid, exhibit the same reaction with the liquor iodinii comp. as morphia.

The precipitates from aconitia, veratria, strychnia, and probably from all the alkaloids, are not dissolved by dilute acetic acid, U. S. P., dilute muriatic acid, U. S. P., or by the officinal sulphuric acid diluted with 40 times its bulk of water.

A solution of strychnia (one grain to five drachms) treated with the liq. iodinii comp. retained only a slightly bitter taste.

*Query.* Could not the above named solution of iodine be used as an antidote to some of the alkaloids, as by its penetrating properties entering the tissues of the stomach and combining with the absorbed poison, it would form an insoluble compound?

A case of poisoning by extract of belladonna, in which a similar preparation of iodine was successfully employed as an antidote, is recorded in the American Journal of Pharmacy, November number, 1855.

Philadelphia, April, 1856.

*Test for the Presence of Alcohol in Chloroform.* By WILLIAM PROCTER, JR.—Being recently engaged in some experiments for Prof. Wood, on the solubility of chloroform in water, with and without the aid of alcohol, I was struck with the greater solubility of that substance than the books admitted, when it was suggested that the chloroform might be impure. To ascertain this, its specific gravity was taken with

\*NOTE.—These Berlin instruments may be had in this country of Mr. Weighman, of Boston; H. Geßeler, 343 Broadway, N. Y.; Bullock & Crenshaw, 6th and Arch streets, Phila., and A. P. Sharp, at Howard and Pratt streets, Baltimore. Some of them are without the thermometer attached, but they are greatly preferable with this addition.—EDITOR AM. JOURN. PHARM. May, '56.

great care, and found to be but 1.482. Suspecting alcohol to be present as the cause of this levity, it occurred to me that an oxidizing mixture of bi-chromate of potassa and sulphuric acid would indicate its presence without being interfered with by the chloroform. When a portion of the suspected chloroform was added to the deep orange colored sulpho-chromic mixture, the color soon changed and gradually became green from the formation of sulphate of chromic oxide. Another portion of the chloroform was then mixed with an equal bulk of concentrated sulphuric acid, and agitated occasionally for several hours; the acid gradually becomes discolored and brown. When, now, a part of the supernatant chloroform was added to the sulpho-chromic mixture, no change occurred after standing a week.

As this chloroform, which was made in Philadelphia, had probably been washed in water, it follows that mere aqueous treatment will not remove the last portions of alcohol, and that agitation with chloride of calcium or sulphuric acid is necessary to effect its abstraction. The latter, however, as recommended by Gregory is objectionable as giving a tendency to the chloroform to eliminate chlorine.

For medical use, however, the small per centage of alcohol present is perhaps of no account, and it is probable that the larger part of the commercial chloroform is less contaminated than the specimen tested. As corroborative of this reaction it may be observed that Dr. Plummer, of Indiana, in experimenting with the sulpho-chromic mixture on volatile oils, noticed that it was colored green by chloroform, which he believed was due to that body, whilst in reality it was the alcohol contained in it.— *Am. Jour. Pharmacy.*

ART. X.—*Researches on Ozonized Oxygen. Organic Bodies capable of exciting and transmitting ordinary Oxygen:* By Professor Schönbein of Basle. *Vierordt's, Archiv. für Physiologische Heilkunde* Feb. 15, 1856. Translated from the *Gazette Hebdomadaire de Médecine et de Chirurgie*, May, 16, 1856: By M. MORTON DOWLER, M. D., New Orleans.

OXYGEN, as found in the atmospheric air, or as obtained in the laboratory, is not, at the ordinary temperature capable of even oxydating potassium, and its general disposition is, in relation to simple bodies, to conduct itself as a body which is chemically indifferent. The researches of Mr. Schönbein, has demonstrated, that under the influence of certain agents, as well ponderable as imponderable, oxygen so modifies itself, that it is capable, at very low temperatures, of oxydizing various substances, as silver, for example. Electricity, Phosphorus, etc., are capable of imparting to it this property; and here, lest we should too largely dilate on the subject under consideration, we would specially refer the reader, who may require more ample information thereon, to the memoir of the



Basle Professor, which he has published in the *Archives* of Liebig, entitled : *The Different Conditions of Oxygen*.

Oxygen then exhibits a property, in common with various other bodies which is known by the name of *allotropism*. We may therefore have O, the ordinary Oxygen, a gas chemically indifferent and inodorous, and we may have O<sup>o</sup>, the ozonized oxygen, which is chemically active, and having a remarkable odor. One of the most delicate tests for the presence of O<sup>o</sup>, is the tincture of guaiacum, which the ordinary oxygen does not affect, and to which the ozonized oxygen gives a blue color.

Certain combinations of oxygen, (the peroxides of lead, manganese, etc.,) have also the property of bluing the tincture of guaiacum, which M. Schönbein attributes the transformation of a portion of their oxygen into ozone ; and instead of designating the peroxide of lead, for example, by Pb O<sup>2</sup>, he expresses its composition by Pb O+O<sup>o</sup>, certain oxygenized substances render blue the tincture of guaiacum, because they contain ozone.

The addition of certain substances to the tincture of guaiacum, is capable of exciting the air, and of changing O to O<sup>o</sup>. Thus on agitating the tincture of guaiacum in the air, no modification is observed ; but if, however, we add to the tincture a certain quantity of chemically pure mercury, and agitate the mixture under the same conditions, the yellow color will be changed to blue, and this coloration is as strong as if it had been produced by the peroxide of lead or manganese.

It has been shown by experiment, that a series of oxidating bodies possess the power of divesting the resin of guaiacum of the ozonized oxygen by which it is colored, and of restoring to it its primitive color. It is then seen that the O<sup>o</sup> does not produce a special oxidation of the guaiacum, the oxygen being contained in the tincture in the active state.

The tincture serves as a vehicle, and can thus transmit the oxygen to certain other bodies. The blued tincture of guaiacum may then be considered as exhibiting a resin containing O<sup>o</sup>; and as pure mercury mixed with the yellow tincture of guaiacum, gives the blue color, it is natural to conclude that mercury is an excitor of ordinary oxygen ; that there is such transformation, that the metal re-acts on the tincture in the same manner as does oxygen when modified by phosphorus, or electricity, or by its condition as it exists in the peroxides of lead or manganese, etc. The tincture of guaiacum, as thus blued, spontaneously but gradually returns to its original color—more rapidly in the light than in the dark—and M. Schönbein draws the conclusion from this fact, that with time

and light, ozonized oxygen contained in the tincture, oxidates really the constituent elements of the resin of guaiacum. These few details will suffice, we imagine, to render intelligible the new researches of M. Schönbein. The botanists are well aware that certain mushrooms—especially the *boletus luridus*—rapidly assume a blue color when broken, and exposed to the open air. Analogy led M. Schönbein to infer the existence of an organic substance in these cryptogamia, which is an excitor of the ordinary atmospheric oxygen; a substance which oxydates, and is capable like the guaiacum, of transmitting this ozonized oxygen to other substances. The analysis of the *boletus luridus* demonstrated the fact, that this cryptogam contains a resin in every respect like that of guaiacum; and which like the latter, is capable of serving as a vehicle of the for ozonized oxygen. (See the *Comptes Rendus of the Academy of Munich*.)

But there remains a question to be solved. Why does the resin of the *boletus* spontaneously blue itself by contact with the air? What is the cause of this phenomenon as observed in the peeling of raw potatoes? Is there not in these vegetables a substance which plays, from its relation to the resin of the *boletus*, the same part that mercury does from its relation to the resin of guaiacum? a substance which has the power of exciting, ozonizing, and absorbing the oxygen of the air, and of transmitting it to divers other substances? The importance of these questions to chemistry and physiology will be readily appreciated. M. Schönbein has further instituted some new experiments, the results of which are contained in the article which we are now discussing. The cryptogam employed by him was the *agaricus sanguineus*. The tincture of guaiacum and the resinous extract of the *boletus*, put on, when sprinkled over the *agaricus*, a deep blue color. But further; on taking a mushroom, having the power of blueing the guaiacum, crushing it and filtering the juice through paper, a yellow neutral liquor was obtained, having the power of blueing the tincture of guaiacum and the extract of *boletus*, as energetically as either chlorinated or brominated water, the peroxides of lead or manganese, or a solution of the hyperchlorites, or any other of the most powerful agents of oxidation.

The degree of development of the cryptogams, greatly influence the energy with which their juice acts. Frequently its mixture with the tincture of guaiacum, does not immediately produce the characteristic blue color, the color not appearing till the mixture has been agitated for a longer or shorter time, or having been made to pass through a current of oxygen.

The intensity of the new color does not make its appearance otherwise than gradually, the mixture being at first violet, then sky-blue, and

finally deep blue. Cold retards, *while* heat accelerates these transformations. The juice produced by the *agaricus sanguineus*—or by the cryptogams which re-act in the same manner as it does on the resin of guaiacum—contains a greater or less amount of ozonized oxygen; it possesses the property of exciting the atmospheric oxygen to combine with it, and the power of transmitting the oxygen to the guaiacum, or to the resin of the boletus. Numerous facts show that the cryptogamic juice, (capable of blueing guaiacum without contact with the air,) contains oxygen capable of combining itself with other oxidable substances. In fact, if we add to the cryptogamic juice—having the power of blueing guaiacum without contact with the air—zinc filings, and agitate from time to time the mixture, and if we add liquid hydro-sulphuric acid, it will be seen that the juice will lose the property of blueing the guaiacum, but it will be restored by leaving it for a greater or less time exposed to the air, or to a current of ordinary oxygen. If the cryptogamic juice be heated to ebullition, the property of blueing guaiacum is removed; neither contact with the air, nor exposure to current of ordinary oxygen, can restore it again. In the same manner, if the mixture of zinc, hydrosulphuric acid, and cryptogamic juice, be heated to ebullition, neither the current of air, nor of ordinary oxygen, can again restore its properties, as is the case when heat is not employed. Ozonized oxygen acts on the elements of the substance contained in the cryptogamic juice, in such manner that it oxidates the latter gradually, preventing it from producing its oxidating phenomena, and from exciting common oxygen. By degrees, (and even at the ordinary temperature,) the cryptogamic juice, charged with ozone, loses the power of blueing guaiacum, and contact with the air, or with a current of oxygen is powerless to restore it. Heat would have the effect of giving activity to the combination of ozone with the substance constituting its vehicle. The truth of this remark is proven by experiments on the oils, and on the resin of the boletus. The juice then, of the cryptogam, has but little affinity for ozone, since it yields readily to the resin of the boletus from which the tincture of guaiacum removes it. But the ozone has not changed its condition, in changing its vehicle. If we mix with the cryptogamic juice charged with ozone, a feeble solution of albumen, we shall not see any modification in the fluid, so long as there is a low temperature; after standing a long time, the mixture is capable of blueing the tincture of guaiacum. If we heat the mixture till the albumen is coagulated, we shall see this property disappear, which the heated juice *alone* retains, at the same temperature. If this mixture be allowed to cool, and if a current of air, or of oxygen, traverse it for a



long time, it will recover the power of blueing guaiacum. We may see, thus, that placed in contact with albumen, and at a heat but little above that of the blood, the cryptogamic juice loses its ozone, but is capable of resuming its property of exciting and absorbing atmospheric oxygen, thus modified. It is the albumen, that at a certain temperature absorbs the  $O^o$  of the cryptogamic juice mixed with albumen; the blued tincture of guaiacum requires many hours for the removal of the color, at the ordinary temperature. It takes place in twenty minutes at  $30^o$ , and in 7 minutes at  $40^o$ , of Reaumur. Here again the albumen absorbs the ozone of the tincture of guaiacum. It remains for us to discover what modifications this absorption causes the protean body to undergo. May it not contain a substance, having the power of serving as a vehicle for ozone? Such are the principle results obtained by M. Schönbein, and however barren these chemical terms, and experiments of the laboratory, may appear to the physician, it is not the less true that there may be drawn from them corollaries of the highest importance to medicine and physiology. For many years chemistry has not only continued to add to the number of known organic combinations, but to seek out the causes of the most simple phenomena. This multiplication of the discovered products of life has led to a neglect of the conditions essential to their production. The discoveries of M. Schönbein have in this respect, a great value. A profound obscurity still reigns in physiology touching the process which nature employs in assimilating to the living body the elements of its nutrition. The richness in oxygen of the products rejected in the form of excretions, and the small quantity of this gas found in our aliments, led to the admission of an oxidation, a combustion going on in the interior of the organism. But in the laboratory in oxidation, it is necessary there should be present a certain degree of heat; and it is M. Schönbein, who has first explained how bodies the least combustible are changed into carbonic acid, water, ammonia, etc., at a very low temperature under the influence of the energetic affinities displayed by ozonized oxygen.

The researches which we here exhibit lead us to believe that one of the constituents of the blood—the albumen perhaps—possesses the property of exciting the oxygen of the atmosphere, and of transmitting it, in this state, to various oxidable bodies. The ozone forming itself under the solar rays, or in proximity to violent acts of oxidation, (as the combustion of phosphorus, etc.,) being spread into a great number of organic bodies, (oil of turpentine, oleic acid, etc.,) must play an important part in fermentation, and in the great work of combustion, of which the lungs are the bellows to the furnace. The ozonized oxy-

gen perfects, and renders fit for absorption, the bodies which are unfit for assimilation, and decomposes into excretional products the substances no longer subservient to life. Who can say if pathology may not by means of this allotropism of the most generally diffused gas in nature, discover an *x* in the grand problem of the alterations of the blood; if the science of therapeutics may not thereby find the means of rendering more active and efficient certain medicinal agents; if even the ætiology of epidemics may not be found to have some relation to the modifications of oxygen? It is time these questions were solved; and in conclusion, we cannot refrain from rendering justice to the eminent professor, whose beautiful researches have pointed out new paths to modern experimenters.

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ART. XI.—*Cæsarian Section*. By CHARLES S. MILLS, M. D.

WE are sure our readers will be interested in the details of the following interesting case of cæsarian section, and exemplification of surgical triumph. As far as we are informed, this is the second recorded case of the operation in Virginia. Some dozen years ago, a case was reported by Dr. Herndon, of Fredricksburg, in the *American Journal of Medical Sciences*, in which the operation was undertaken for the removal of a putrid fœtus, and which terminated successfully. Dr. Mills' is the first case in which both mother and child have been saved.

The statistics of this formidable operation, up to 1847, yields the following results (*West's Reports*):

It has been performed in 378 cases, of which trust-worthy accounts have been given. In 145 of these cases the women recovered; in 233 they died; or the recoveries were in the proportion of 28 per cent., or as one in  $2\frac{1}{6}$  cases. The fate of 318 children is mentioned, of whom 219 were saved; 99 were lost; or the child survived in 68 per cent.; or in rather more than two cases out of three.

We have no accurate data from which to make a record of the number of instances in which both mother and child have been saved.—  
EDITORS.

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*Gentlemen*—In obedience to your request, the following report of a case of hysterotomy by the cæsarian section, is furnished for publication in your Journal.

I deem it unnecessary to accompany it with any comments, as beyond the mere fact of its most gratifying success, the operation perhaps presents nothing of peculiar interest to our profession. The apprehensions of diffuse peritonitis which deterred the surgeon formerly from cutting into the abdominal cavity, have been demonstrated to be in a great measure ill-founded. The removal of tumours from within the abdomen by operations involving not only the incision of the peritoneum, but

its prolonged handling and dissection, has of late years become a thing of ordinary occurrence ; and whatever may be the differences of opinion among professional men as to the *expediency* of extirpating large ovarian tumours, there can be no doubt of the *practicability* of the operation. Even the rude and barbarous modes in which the cæsarian section has at times been performed, and successfully, by persons wholly unskilled in anatomy and surgery, might long since have satisfied the most cautious that the dangers of extensive and uncontrollable peritoneal inflammation had been greatly exaggerated. Abdominal hysterotomy is certainly a grave and hazardous operation, by whatever mode it may be performed, and should only be resorted to as a *dernière ressource*; but when the life of a fellow creature is entrusted to the care of a medical practitioner, the latter should be able to afford his patient all the chances which advancing art and science have placed at his disposal.—Hence, in some cases of pelvic contraction, or of extreme mal-position of the fœtus, wherein embryotomy, though practicable, would necessarily involve great injury to the mother, and endanger her life, it is for the accoucheur to determine whether abdominal hysterotomy, if resorted to at an early period of labor ere the patient has been exhausted by prolonged and painful efforts to force the delivery, might not be the safer operation. It is only from well authenticated statistics that the comparative dangers of the two operations can be ascertained.\*.

*Richmond, June 7, 1856.*

On Monday, the 12th of May, 1856, between eight and nine o'clock in the evening, I was requested to attend immediately a negro woman belonging to Mr. Thomas Samanni, of this city, in labor with her first child. My friend, Dr. Beale, the family physician of Mr. S., was prevented, by severe indisposition, from attending, and the case was entrusted to my care. At an early period, he had recognized the pregnancy and the difficulties by which the delivery of a child at maturity would be attended, and for the safety of the mother, had recommended a premature delivery. His advice having been rejected, he looked forward with anxiety to her approaching labor, and had spoken freely to me upon the subject. On entering the room, therefore, I was not surprised to recognize in the person of my patient, a little creature well known in our city on account of her diminutive size. She is twenty-three years of age, has generally enjoyed good health, has a large and well developed head, chest broad and full, pelvis narrow, with limbs and body remarkably short, her height being only three feet nine inches. I found her walking about the room apparently in great pain. On inquiry, I learned that she had been complaining since the previous evening, having passed a restless night, but that the violence of the pains had greatly increased within two or three hours ; she was supposed to be at full term of gestation. Causing her to be placed in position for an examination, the finger readily passed along the vagina to the os uteri, which was soft and sufficiently open to admit its extremity, and felt through the membranes what I at first thought was an arm of the child lying be-

\* In the case now reported, there was no opportunity afforded for the exercise of such responsibility, since, in the opinion of all present, embryotomy was wholly impracticable.



side its head. A more careful examination, however, soon satisfied me that instead of the child's head, this was the promontory of the sacrum projecting across the pelvis above the pubis, and leaving a space between the two bones scarcely wide enough to allow two fingers to pass, while just above the symphysis and apparently on the pubis was either an arm or a leg, but which I could not yet determine. Recognizing at once the utter impossibility of effecting delivery without the aid of instruments, I left the patient with her female attendants, ordering an enema for her, and proceeded to my office to procure them. Returning in about an hour, and finding the pains active with the os uteri dilatable, I ruptured the membranes and endeavored to pass my hand up, determined to bring down the foot if a leg presented, or turn the child in case the presenting part should be an arm. As the waters escaped, I made an effort to pass my hand through the superior strait, but succeeded only in passing two fingers, and at the same moment feeling a foot of the child, I brought it down. I then endeavored to find its fellow, but being unable to reach that or any other portion of the child, I tried, by traction on the presenting leg, which I now recognized as the right, with its instep turned to the hollow of the sacrum, to force down the body into the pelvis. After using as much force as I thought judicious, and finding that the body still remained out of reach, I determined to send for assistance. At least an hour elapsed before the arrival of Dr. Deane, who was absent when my messenger reached his house. Explaining to him what had been done by me, I expressed the opinion that the deformity was so great as to render embryulcia impossible, and that we should be compelled to resort to the cæsarian section. The Doctor then made a very careful and patient examination, endeavoring to bring down the body of the child within reach of the instruments for embryotomy; but though very powerful traction was applied to the presenting leg, which seemed to fill the space between the symphysis pubis and the promontory of the sacrum, the body of the child remained immovably fixed above the entrance to the superior strait and out of reach. He then concurred with me in the opinion that embryulia was impracticable, and that the only chance of delivery was to be found in the cæsarian section. Not having with me the instruments and apparatus requisite for the proper performance of that operation, I left him with the patient and started to procure them from my office, when I met at the front door of the house, Dr. Bolton, who had likewise been sent for. I requested him to join Dr. Deane, whilst I proceeded to get the instruments. Soon after my return, Dr. Drew, (whom I was happy to learn had been sent for by Dr. Deane, and, but for the lateness of the hour, near midnight, I should have requested other medical friends to lend me their encouragement in so grave an operation,) entered the room, and was asked to examine the case and confer with us. It was now proposed that the patient should be anæsthetized, and an effort made to reach the abdomen of the child in order to eviscerate it, if after a more thorough examination, it should appear that the child could then be brought away. This was accordingly done, and Dr. Bolton with great difficulty succeeding in passing two fingers through the superior strait so as to reach with their extremities the abdomen of the child, but could make no use of them to

conduct an instrument with certainty or safety to the mother, and was of opinion that it would be impossible to deliver the child through so narrow a passage even if we could succeed in eviscerating it. Being still loath to resort to the cæsarian section, until every effort to deliver per vias naturales had been tried and failed, the presenting leg was now enveloped in a bandage, and, the mother being still under the influence of chloroform, gradual but very powerful traction was made, hoping still to force down the body into the pelvis. The greatest force which could be applied without risking the laceration and separation of the limb, produced no other effect than to bring down the thigh a little lower, which was so firmly bound between the pelvis and the promontory of the sacrum as to cause strangulation of the leg and foot. Upon consultation, it was now unanimously thought that the cæsarian section should be made without further delay, and accordingly, a table was prepared in the centre of the room and the requisite arrangements made for the operation. The patient was again brought fully under the influence of chloroform, and removed from the bed to the table, her female attendants being excluded from the room.

#### OPERATION.

Catheterism having been effected, though with some difficulty, in consequence of the interference of the foetal leg and the displacement of the bladder, the patient lying on her back, with her head and shoulders slightly raised on pillows, and her knees flexed over the edge of the table, I stationed myself as most convenient, on her left side, and made an incision through the integuments from about two inches above the symphysis pubis along the line of the linea alba, passing around the umbilicus to about an inch above. The abdominal walls being thin, were cautiously dissected along the length of the first incision down to the peritoneum, which was carefully incised so as to admit the point of the finger to serve as a director, and the incision extended upwards and downwards, giving exit to a large quantity of serum, and laying bare the body of the uterus with a small knuckle of intestine overlapping its fundus, while the contracted bladder lay at the lower terminus of the incision and covering the cervix. The contact of cool air seemed to stimulate the uterus to contraction, and as it was no longer kept in place by the abdominal walls, I spread my hands over it to sustain it until it became quiescent. So far, there had been no hemorrhage, and as the patient was fully anesthetized, (beautifully exemplifying the happy effects of chloroform) there was no necessity for holding her, and the abdominal viscera remained throughout the operation quietly in position, and offered no impediment whatever. A vertical incision was now cautiously made throughout the walls of the uterus, corresponding in direction with the external one, and about six or seven inches long, dividing in its course a large uterine sinus, followed by a gush of blood, and exposing the left shoulder and arm of the foetus which I seized with my left hand and raised the child, while introducing my right, I caught hold of its neck and flexing it on the body, readily extracted it from the womb, which immediately commenced contracting. The placenta was detached and came away with the foetus, of whose vitality I was assured by the

pulsation felt in the vessels of the neck. The child was handed to one of the gentlemen present, whilst I, twisting the membranes around the placenta withdrew them from the uterus. Dr. Bolton undertook the resuscitation of the child, which, in a few minutes, gave utterance to the usual cry so grateful to the ears of the anxious attendants, and in the meantime, my hand was kept upon the uterus stimulating it to contraction, and excluding from between its incised wall any viscus which might offer to enter its cavity. The womb being now firmly contracted and the hemorrhage checked, the clots of blood were carefully removed, and the edges of the external wound brought together and secured with six or eight interrupted stitches and a broad circular bandage. The patient was now replaced in bed and made as comfortable as possible. She had now recovered her consciousness, her pulse being very good, and general condition as favorable as could be desired, when we left her with her female attendants, enjoining perfect quiet, and ordering that a pill containing a grain of opium should be given to her every hour, until sleep was produced.

Tuesday, 13th, 9, A. M.—Patient has taken three of the opium pills; slept some and feels comfortable; pulse 104; soft and compressible; abdomen tender and slightly tympanitic; skin moist and cool; tongue clean, and countenance good; applied four or five strips of adhesive plaster to sustain the stitches; covered the wound with a compress, and covered the abdomen on each side with a warm poultice; ordered the opium to be continued, and ice to be given when wanted.

12, M.—Complains of the afterpains, and of soreness along the line of the incision, which, however, have not prevented her sleeping; has taken two of the pills since the morning's visit. Opium continued.

4, P. M.—Is in less pain; has slept well, and passed urine without assistance; some oozing observed from the lower edge of the incision. Renewed the poultice.

10, P. M.—Feels comfortable; pulse 108; no headache, tongue clean and moist; countenance good; has taken altogether six grains of opium; has no desire for food; thirst diminished; give the pills only when in severe pain.

Wednesday, 14th, 9, A. M., thirty-one hours after the operation.—She has passed a restless night, being annoyed by an accumulation of thick mucus in the throat, the efforts to expectorate which caused great pain from the contractions of the abdominal muscles; some disposition to vomit also; has passed urine without difficulty; abdomen tender, swollen and very tympanitic; pulse 108 and soft; tongue clean and moist; countenance good; has taken two more pills of opium, being all she had; substituted for the opium the sulphate of morphia, one-third of a grain to be taken every hour until she is composed. Poultice renewed.

12, M.—Condition improved; has taken one grain of the morphia, and is more quiet, though still suffering greatly; continued the morphia.

5, P. M.—Pain greatly increased; pulse 125 and hard; complains of annoying cough, with difficulty of breathing; great tenderness of abdomen and very restless; bled her from the arm until a decided im-



pression was made upon the pulse with marked abatement of all the unfavorable symptoms.

10, P. M.—Has slept some ; is much more quiet ; breathes freely with full motion of the abdominal muscles ; pulse 125 and soft ; blood drawn presented a thick buffy coat. Renewed the poultice, and ordered the morphia to be given only to relieve pain.

Thursday, 15th, 9, A. M., fifty-five hours after the operation.—Has slept nearly the whole night without morphia ; has urinated freely ; sick stomach gone ; pulse 125 and soft, skin moist ; breathing natural and free ; pain in the abdomen less ; which, however, is still very much enlarged and tympanitic ; wound in the abdomen healing ; discharge from it very slight ; no lochial discharge per vaginam ; tongue and countenance good. Renewed the poultice.

5, P. M.—Complaining a great deal ; abdomen very tense ; has no sick stomach ; but a great deal of flatus passing from her stomach induced probably by some lemonade which had been given her. Gave her a half grain of sulphate of morphia in solution, and renewed the poultice.

10, P. M.—Condition more comfortable ; has slept well ; skin moist ; tongue clean ; disposed to sleep.

Friday, 16th, 11, A. M., eighty-one hours after the operation.—Prevented from seeing her at an earlier hour, I found her in a very comfortable state, having slept nearly the whole night without any opiate. Is quite cheerful, and asks to have a little buttermilk, which was allowed in small quantities ; her skin is perspiring freely ; voice good ; pain less ; abdomen subsiding and softer ; fever diminished ; pulse 120 and soft ; tongue clean and moist ; countenance good. Renewed the poultice.

5, P. M.—Condition same as in the forenoon ; has taken about half a pint of buttermilk in small quantities ; being the only nutriment since the operation ; complains only of afterpains which are now and then very severe ; abdomen still tense, though subsiding and less painful on pressure. No morphia has been given to-day, and she has rested quietly, though not sleeping.

10, P. M.—Found her restless ; had her placed more comfortably in bed and removed the poultice, replacing the bandage without it. Her condition is improving ; pulse 116. No lochial discharge yet observed from the vagina, and only a very slight oozing from the external wound. Repeated the morphia.

Saturday, 17th, 9, A. M.—Has slept very well since midnight ; suffers but little pain ; skin moist ; countenance good ; tongue clean ; pulse 110 ; abdomen soft and diminished in size. The child who has hitherto been nourished with a solution of gum acaciæ slightly sweetened, was now applied to the mother's breast, but as no milk had been secreted, I ordered for him a little milk and water, with directions to place him now and then to the breasts. He has been very well, and his right leg, on which very violent traction had been exerted before birth, and about which some anxiety was felt, has entirely healed, and is but little different from the left.

3, P. M.—Found her trying to nurse the child, which, however, gets no milk. She has taken a little boiled rice and milk, and feels very comfortable. Has no action yet from the bowels.

10, P. M.—Found her a little restless and feverish, with tongue slightly furred ; she has not slept to-day, and probably fatigued herself with her child ; does not complain of pain ; abdomen still tympanitic, though less sensitive on pressure. Gave her one-third grain of morphia.

Sunday, 18th, 10, A. M.—Has slept tolerably well ; tongue cleaner than it was last night ; abdomen soft and less tympanitic ; pulse 110 ; countenance good ; skin cool, and general condition favorable, but has had no action yet from the bowels. She has no desire to eat, and complains of pain in the hypogastric region. Removed the stitches which seemed to irritate the wound, and renewed the adhesive strips. The wound seemed to have healed in its upper third, and along the remaining portion, the adhesion has taken place in the inner tissues, but the skin has not united. No opening remains into the abdominal cavity. Had her bed made more comfortable.

4, P. M.—Thinks she had a slight chill about two hours ago ; complains of considerable pain still in the hypogastric region, which, however, is not constant. Her skin is soft and cool ; tongue clean and moist ; countenance showing no appearance of distress ; pulse 116 and compressible. She has taken no food ; passes urine freely.

10, P. M. Complaining still of hypogastric pain ; abdomen very much reduced and soft ; tongue slightly furred ; has had no action from the bowels. Ordered a pill of fifteen grains of calomel

Monday, 19th, 10, A. M.—Calomel has not yet operated, but her tongue is cleaner, and general condition better than last night.

5, P. M.—Condition the same as this forenoon ; has felt some desire to have an action from the bowels, but was unable. Ordered arrangements to be made for administering an enema should not the bowels be evacuated by 10 o'clock to-night.

10, P. M., one week to-night since the operation.—Bowels not yet emptied ; still complains of pain in the hypogastrium ; tongue is clean ; pulse 116 ; countenance good ; skin cool ; abdomen soft, though still slightly painful on pressure, especially in the iliac regions ; she has taken no nourishment to-day. Ordered an enema of warm water, which was returned in a few minutes with a free evacuation of fecal matter.

Tuesday, 20th, 10, A. M.—Slept very well ; feels much more comfortable ; has had but little pain ; tongue is clean ; pulse 110 ; has some desire to eat ; let her have tea and crackers in small quantities.

10, P. M.—Has been very quiet to-day ; present condition very satisfactory ; pulse 104 ; has taken pretty freely of the tea and crackers, which have agreed very well. The child has been nursed several times.

Wednesday, 21st, 9, A. M.—Slept well last night ; feels comfortable ; pulse 104 ; skin cool ; countenance natural ; soreness of abdomen less ; child nurses freely.

10, P. M.—Found her complaining a great deal of pain in the right lumbar region, caused probably by flatus in the ascending colon, as there is great tympanitis there, and the pain is relieved by pressure. Renewed the adhesive strips ; the skin has not yet united along the line of the incision ; tongue clean and moist ; pulse 100 ; general condition

good. There has been no action from the bowels since Monday night.

Thursday, 22d.—Rested badly last night ; suffering a great deal from colicky pains ; tongue clean and moist. Ordered an enema of warm water.

5, P. M.—Feels very comfortable ; had a large discharge of fecal matter along with the enema ; tympanitis almost entirely gone ; has some lochial discharge from vagina. Her diet has been buttermilk and tea and crackers.

Friday, 23d, 9, A. M.—Rested very well ; feels very comfortable ; appetite improving ; allowed a small bit of ham.

Saturday, 24th.—Condition improving ; pulse returning to a healthy standard ; soreness of abdomen very slight, and confined to the iliac regions ; sleeps well ; appetite is good, though her diet is still very plain, principally buttermilk, which she is fond of, and which agrees well with her stomach.

Sunday, 25th.—Same as yesterday ; has rested well ; general condition very satisfactory, though there has been no alvine evacuation since Monday night.

Monday, 26th.—Did not rest very well last night, suffering from distention of the bowels ; tongue, however, clean and moist ; pulse 96 and soft ; skin cool and countenance cheerful. An ounce of castor oil was administered, which purged freely during the day with relief to all her unpleasant symptoms.

From this time, nothing in her condition occurred worthy of note until the 30th of May, when she complained of pain in the calf of the left leg, which I found tender on pressure, the tenderness circumscribed and unaccompanied by hardness or swelling. There was no febrile action, but tracing the course of the femoral vessels, no pain was felt until the hand approached the ramus of the pubis where the vessel could be felt hard beneath the fingers and painful. There was also pain felt in the iliac fossa when pressed on. As the bowels were still torpid, I ordered ten grains of calomel at night, which dose not purging, was repeated in the morning and followed by an ounce of castor oil at night. At the same time, the leg was enveloped in a warm poultice ; the medicines purging freely, and the poultices were renewed night and morning, under which treatment the tenderness gradually disappeared after several days, leaving, however, a feeling of stiffness in the limb and a sense of drawing when an effort was made to extend it or put the foot to the ground.

In consequence of this phlebitis, she has not been allowed to leave her bed, though she is in other respects sufficiently well at this time to do so. The child has not had a moment's sickness since its birth, and no medicament whatever, has even been given to it. It is a fine, hearty child, and rather above the average size of children.—*June 7, 1856, Monthly Stethoscope and Medical Reporter, Richmond, Va., July, 1856.*



ART. XII. *An appeal on behalf of Southern Medical Colleges and Southern Medical Literature.* By JAS. C. BILLINGSLEA, M. D., of Foster's, Tuscaloosa Co., Alabama.

MOST persons might think that this communication should be made through the medium of a popular newspaper, but as physicians are more nearly interested, than any others, on this important subject, I have chosen your journal, through which I desire to call the attention of southern physicians to the *necessity* of patronizing our southern institutions, and our southern medical journals. The necessity of this patronage is *demand*ed, not only by the *political aspects*, which are now presented in these United States, but also by *humanity*.

First, let every southern physician ask himself, how much of patronage is bestowed on our southern literature by our northern brethren; and also, what views *they*, as *Northern men*, entertain towards *us as Southerners*. There is scarcely any article emanating from a southern pen, which is republished in the North, it matters not how much of merit it may possess. But on the other hand, see how *they* are treated by us in return. Our southern journals republish everything, which they think would advance the science of medicine, without any regard to the *geographical location* of the author. All they seem to care for, is our patronage, and don't extend to us the same in return.

If we were so poor in medical literature, and so *wanting* in great minds, whose thoughts are reflected by their writings—if we were destitute of *these*, and of colleges wherein our young men could be trained and instructed, in all that would make them useful in life, *then* I would say, of course patronize northern institutions and journals, for it is the best you can do. But on the contrary, we have medical colleges which in point of *mental* endowments can compare favorably with any in the world. We also have medical journals, which, to the *southern physician* are always filled with matter of interest and profit. And as our northern brethren seem to ignore everything *southern*, simply because we are *slaveholders*; and as scientific men North, can so far forget their duty, as to lend their aid—*substantial aid*—and their voices, to the getting up and sustaining of colonization societies, for the avowed purpose of prohibiting the extension of our domestic institutions, we, as southern physicians, should withhold our patronage (which is not small,) from their colleges and their literature. They would then feel, very sensibly, the extent of our influence. For hundreds of our young men are sent North, annually, to be taught in their colleges, who spend their money most lavishly among them, and return to hear themselves and their institutions traduced, and to see their literature slighted.

But, as I said at the outset, there is another weighty (and I may say more important) reason, aside from politics. I said humanity demanded the support of home institutions. (Now I want none of my professional brethren, who claim a northern college as their alma mater, to take offence at what I shall say.) I say, humanity demands it for the simple reason, that those young men who expect to practise South, with any degree of success, should be taught in our Southern colleges; because our

practice here, in the most of our malignant diseases, is entirely different from that taught in northern institutions, and by northern writers. I constantly meet with physicians of eminence, who graduated North, who have long since abandoned the most of the fundamental principles of practice, as taught them in the *lecture room*, because they have learned, by experience—by observation at the bedside, and by communing with southern writers, that they were unsuited to the diseases as they met them in this climate. It is in vain, to appeal to the young men, or their parents, not to send them North to study medicine, for they are almost invariably governed in their choice of a school by their preceptors.—And it is a lamentable fact, that these same preceptors *generally* advise them to attend lectures where *they* happened to graduate; and so this institution is handed down to the student's student, and so on, as a sort of heir-loom. At the same time, these physicians, not wanting in medical attainments or practical skill, which they have acquired by long study of the diseases common to our climate, at the bedside, will acknowledge, when you appeal to their *candor* and to their *patriotism*, that we have equally as good schools (or even better,) for conveying practical information, as they have North. Some of these brethren will, however, *only* admit, that as our diseases are *so different* from those at the North, and requiring such different treatment from those, that the student *at least* should attend *one course* of lectures South. Now, this admission, of itself, should be enough to convince the student, that if one course South is important, *both* are more so. For why send your student North, when he will have to commence the study of practice when he gets back, after finding out, by experience, (bitter and mortifying as it sometimes is,) that it will not do to put in practice the theories taught him in his alma mater? You are doing him a great piece of injustice when you do so. It will be borne in mind that a large number of our physicians live in the country, or in country towns, in the midst of large plantations, and where, of course, the slave population preponderates largely; and that owing to the exposure of this class of people to the vicissitudes of the weather, the southern physician is called more frequently to visit negroes than whites. And as it has been contended, most ably, by Dr. Cartwright, and others, (and not without reason,) that the distinctive peculiarities of the negro race call for a different mode of treatment than that best adapted to the whites, I would ask, where are our students to learn this peculiar practice? Certainly not in northern institutions!—certainly not from northern journals! As to the study of the *rudiments* of the science of medicine, (Anatomy, Physiology, and Chemistry,) they can be learned North, as well as South, for *they* are the same everywhere. Again, there is no material difference in the practice of Surgery or Midwifery, North or South; but the great difference is in the treatment of our *malignant diseases*, which when treated even on the most approved plans, kill thousands; and this *approximation* to the successful can *only* be attained *readily* by attending southern lectures, and reading southern authors. Then, where is the necessity of deserting our home institutions, or our home literature, and swelling the catalogues of those northern schools with the names of your pupils, and the pockets of those who conduct them with their mon-

ey, when you have medical colleges at your door, where Anatomy, Physiology, Chemistry, Surgery, Midwifery and Therapeutics are taught *as well*, and where practice is taught better? For a man had better never be taught than to be taught wrong.

To the southern student we would say, you can have the satisfaction of spending your means in supporting southern institutions, and southern talent, and at the same time get value received. We do not pretend to say that the fault is in northern Professors, for teaching you such practice, as not adapted to this climate; for they teach such theories as they think best to be practised in their climate, and the fault lies in you for going there to be taught.

To prove what I say in regard to our southern institutions being equal to any as to facilities, I have only point you to the alumni of the Louisville, Charleston, Augusta, Nashville, Memphis, New Orleans, and of other colleges, who are now enjoying in our cities, in our towns, and throughout the country, most enviable reputations as practitioners, as writers, and as lecturers. The South should awake to the necessity of favoring home institutions, which are springing up so rapidly, and are generally *self-supporting*. The founders of, and instructors in, these institutions call loudly for your support. Georgia has now *one* old and well-established medical college, and several others in their infancy; and though it has been said that the medical college located at Augusta was *defunct*, its list of graduates for the present year numbers more than we have ever seen before; and I rejoice to learn that it was never in a more flourishing condition, and never better prepared to impart a thorough and practical knowledge of the science of medicine than at present. This institution still lives to see her graduates occupying the Professor's chair in other colleges. Charleston, Nashville, Louisville, and New Orleans, all offer rare inducements to the southern student.—New Orleans excels any in the United States, and I might say, equals any in the world, in hospital and clinique facilities. There the Charity Hospital is open at all hours during the whole course of lectures, where the student may see hundreds of patients daily, suffering from all the ills that "flesh is heir to." He can see the practice of the professor or physician whose ward he may visit; he can take notes—watch the patient—see the result; and if the disease proves fatal, he can follow the body to the *dead-house*, with scalpel in hand, and there examine *for himself*, to see if the diagnosis was correct. In this respect, New Orleans outstrips all her sisters. But in the majority of our southern colleges, the instructions are very thorough, and a young man even of medium talent and application will most always come out of them a good practitioner.

As to Literature, we have most excellent periodicals, conducted by the most accomplished and scientific members of the profession, and contributed to by the best southern talent, which will compare favorably with any in the United States, both in style and matter. Indeed, each number of them is full of matter of vital interest to the southern practitioner. There is the New Orleans Medical and Surgical Journal, published bi-monthly, and edited by B. Dowler, M. D., which is always full of interesting and scientific matter, and *each number* is worth the sub-



scription price for one year. There is the Southern Medical and Surgical Journal, published at Augusta, Ga., and edited by Prof. Dugas and H. Rossignol, M. D., which is one of the most interesting monthlies extant, supported mostly by southern patronage. There are also the Charleston, Atlanta, Memphis, and other southern journals, which deserve greater credit and better patronage than they receive. So we can't say we have no literature worth supporting.

This article is already more lengthy than at first designed. In conclusion, let me say to my brethren, let us not patronize those northern schools and northern works, simply because "distance lends enchantment" to them, to the neglect of our own. Besides medical colleges and medical literature, the arguments here used will apply equally to literary institutions, periodicals and journals, which are also largely patronized by the South; but I do not propose to notice these more fully, but will leave it to others.

My object is to get the profession to change their misguided system of patronizing *foreign establishments*, when we have as good, yea, *better* at home. My task is done, but imperfectly so; but if I can, by these few desultory thoughts, hurriedly thrown together, set the profession to thinking seriously upon this subject, and perhaps elicit something on my side from more able pens—*then* we may look soon for a reform, and then my object will be achieved. In this, I disclaim all intention of wounding the feelings of any one, or of drawing any invidious distinctions between southern institutions or journals. All I want, is to impress upon my southern brethren the *necessity* of educating their students South, if they intend *practising* their profession South. But if they design *locating* North, I also say, send them North to study.—*Southern Med. and Surg. Jour. Augusta, Ga., July, 1856.*

ART. XIII.—*Scarlatina*.—Dr. John Poole (in the N. Hampshire Jour. Med.) says: For the last twenty-five years I have seen many cases of Scarlet Fever, and in all its forms and grades, and I would hardly thank any one to tell me *a priori*, what I must do for my patient. I must judge at the bed side what treatment to adopt. I have, in many cases of an inflammatory character, bled my patients at the onset, and in some few cases repeated the operation with the happiest effect. But may never find another case in which I should think proper to bleed, but still I may. I have hardly a regret of so doing, if done early. I remember how I treated the first case I ever saw, viz: with an emetic; gave no cathartic medicine, but kept the surface constantly cool by sponging with cold water. It operated like a charm. I recollect another case, bordering on congestion of the brain, which I bled, gave cathartics, used the warm bath, and enveloped in flannel, with the happiest effects. I have again seen convulsions supervene at the first and not yield until the bowels were thoroughly evacuated. I consider laxatives nearly always proper and often quite active catharsis. I have a word or two to say upon the use of blisters, without theorizing at all about their influence for evil or for good, upon

the urinary organs. I used formerly, sometimes to blister my patients, and in a few, but in a very few cases have seen any benefit, but have seen much suffering from their use without any good result. I could now hardly be persuaded to apply one in any case, unless to the throat when there was no eruption, and then with caution. \* \* \* I think well of the chloride of potash in many cases of Scarlatina, and I think much of keeping the throat and mouth clean, and of making suitable applications to the parts when indicated, such as solutions of chloride of soda, kreosote, nitrate of silver, marsh rosemary, borax, &c., of suitable strength, with a sponge, brush or syringe. The excitement should be equalized and skin attended to.

ART. XIV. *A Review of the Present State of Uterine Pathology.*  
By HENRY BENNET, M. D.

*The Displacement Theory.*—In my preceding communication I drew attention to the smallness of size and lightness of weight of the uterus; to the great laxity of its means of support and fixity; to the extreme mobility which it consequently evinces; to the ease with which it obeys the many physiological causes of displacement to which it is subjected; and to the complete immunity from pain, or even inconvenience, with which these displacements are borne.

I explained the immunity from pain evinced by the uterus when displaced under the influence of physiological causes, by referring to the law through which all our viscera bear, without inconvenience, any amount of displacement compatible with their means of fixity, and any amount of pressure to which they can be exposed from the proximity and functional activity of surrounding organs. I pointed out that this capability of our organs to bear considerable pressure without inconvenience is not only observed in the temporary physiological conditions described, but is also found to exist under the permanent pathological pressure of *non-inflammatory* morbid growth, such as tumors, aneurisms, &c. I then laid stress on the very important fact, that when once inflammation supervenes, this immunity from pain and inconvenience on pressure ceases;—as evidenced by the inability of patients suffering from inflammation of the abdominal or thoracic viscera to lie otherwise than on their back; or as evidenced by the pain which is experienced on the pressure of an inflamed finger. Finally, I recalled the rapidity with which the uterus increases in size and weight under the influence of the physiological stimulus of pregnancy, and reverts to its natural size and weight when that stimulus is removed. This brief recapitulation of my last communication is necessary, as in the above facts is found the key to the history of uterine displacements or deviations, as I have interpreted them.

The uterus may be displaced or deviated in various ways. Its position and form may be modified with reference to its own axis, or with reference to its conventional anatomical pelvic axis, which corresponds, as we have seen, to that of the upper pelvic outlet. When the axis of

the uterus itself is modified, the uterus is said to be flexed, anteriorly, posteriorly, or laterally; and we have thus antero-flexion, retro-flexion, and latero-flexion. When the uterus is displaced *in toto*, without any abnormal bend or flexion taking place, so that its axis is changed with reference to that of the upper pelvic outlet, it is said to be antero-verted, retro-verted, or latero-verted.

*Practically*, these two forms of uterine displacement are so often met with in the same uterus, and are often so evidently stages, degrees, of the same morbid state, that Dr. Simpson has merged them into one, and only recognizes, practically, three forms of uterine displacement—antero-version, retro-version, and latero-version. *Theoretically*, however, we must accept the two; for if these displacements really do exercise an important influence in the production of morbid uterine and general symptoms, the *modus operandi* in both, or at least in the more simple cases of both, must be quite different. In simple flexion, unaccompanied by uterine enlargement, the pressure is merely intra-uterine—is only felt in an appreciable degree, by the walls, vessels, and nerves of the bent uterus. In actual displacement of the uterus in mass, the uterine structures themselves remain as they are; the pressure is on the surrounding organs, and the strain is extra-uterine; on the ligaments and extra-uterine vessels and nerves.

Simple or combined, these morbid conditions of uterine position—to which we must add prolapsus, more or less complete, of the entire organ—are generally found to coexist with the uterine suffering or ailment to which I have so repeatedly alluded, and with the inflammatory lesions which so usually accompany it. The partisans of “The Displacement Theory” attribute to the existence of these displacements primary importance, and think that, in the majority of cases, they are the real cause of the mischief existing; that they constitute the morbid condition which principally requires treatment. In their eyes the coexisting inflammatory lesions, the ulcerations, hypertrophies, and indurations, are, in many, if not in the majority of cases, epiphenomena, either occasioned by the displacement, or merely complicating it.

The reasons which have led me to the conclusion that these views are erroneous, that the displacement is, on the contrary, in most instances, really the epiphenomenon, and that it does not require, generally speaking, actual treatment of any kind, may be divided into physiological, pathological, and therapeutical.

*Physiologically*, we have seen that the uterus bears pressure and displacement, when perfectly healthy, without pain or inconvenience. We have seen also, that in the married state the neck of the uterus is very frequently mechanically retroverted, thrust on the rectum, into the sacral cavity,—the body of the uterus being, at the same time, anteverted—and yet that all goes on normally, without either distress or discomfort being experienced. We have seen that slight ante-flexion, or ante-version, is probably a natural condition during life, and that very decided flexions of the uterus may exist congenitally, or be produced by accidental causes, such as violent efforts, habitual rectal constipation, or even menstruation, and remain for a time or for a life, without producing any morbid symptoms. Such being the case, on what reasonable grounds



can we be called upon to attribute to a slight flexion or to a slight displacement of the uterus the symptoms of uterine suffering presented by a female in whom one or the other coëxists with inflammatory lesions? Is it sound logic—is it rational, so to do? It is not much more consistent with physiological observation and common sense to attribute the uterine and general disturbance to the inflammation, and to consider the displacement as the epiphenomenon—as the secondary, comparatively unimportant, element? And if this reasoning applies to slight displacements, does it not also apply, by extension, although in a minor degree, to the more decided uterine displacements when connected with inflammatory lesions?

*Pathologically*, there are many valid reasons for considering moderate displacement of the uterus a phenomenon of secondary, and not of primary, importance, in the cases of uterine suffering in which it is observed. The inflamed uterus, instead of bearing, without inconvenience, as the healthy uterus does, pressure and displacement, often becomes extremely tender, and, like the inflamed finger, suffers not only from pressure, but from mere contact. Thus, even when there is no deviation or displacement of any kind, we frequently find that females who are laboring under slight uterine inflammation, complain greatly of weight, heaviness, and bearing down, and are unable to stand or walk with ease. The mere physiological weight of the inflamed uterus or cervix uteri, its mere contact with, and pressure against, the surrounding organs when in the erect position, becomes all but unbearable, and the recumbent position is sought with eagerness. Why, therefore, should we attribute uterine suffering to displacement only, or even principally, if, on the one hand, we constantly find all the symptoms, local, functional, and general, that characterize such suffering existing in cases where there are inflammatory lesions only, without either deviation or displacement; whilst, on the other hand, mere displacement unattended with inflammatory disease fails to produce these symptoms?

This train of reasoning becomes the more cogent when we consider that—setting aside the physiological and accidental displacements to which I have alluded—uterine displacements are generally the immediate result of enlargement of the uterus or of its cervix, and that enlargement of the uterus is generally the result, direct or indirect, of inflammation. Both these propositions have been contested, and yet it appears to me that they admit of easy demonstration. We have seen that the uterus is physiologically endowed with a vital property that no other organ possesses. Under the influence of its normal stimulus, a fecundated ovum, it increases to twenty or thirty times its usual weight in the course of nine months: and once freed of the ovum, it rapidly diminishes, so as to return in a few weeks to its natural size. This property is capable of being roused by other than physiological stimuli.—Almost any morbid stimulus is followed by the same vital result. Thus all kinds of morbid growth, which originate in the substance of the uterus, are attended with the development and aggrandizement of the uterine structures. Inflammation of the uterus also, wherever situated, is usually attended with enlargement, as in other organs, but more readily than in other organs. If the inflammation is general, the entire uterus

enlarges ; if it is local, the part affected increases, either alone or principally.

This form of uterine enlargement is the direct result of inflammation acting on tissues vitally prone to develop themselves. There is, however, another form of uterine enlargement, indirectly the result of inflammation, which is of great importance, and which does not appear to me to have received the attention that it deserves—viz : enlargement from the premature arrest of the absorption or transformation process, which physiologically reduces the uterus to its normal size after parturition. This pathological arrest frequently occurs as a result of metritis, and, more frequently still, as the result of inflammatory lesions of the cervix uteri, existing before labor, or produced by contusions or lacerations during labor. Under the influence of uterine irritation thus induced, instead of diminishing—as it ought, until it reaches a weight of two ounces—the uterus stops short at three, four, five, &c. When the arrest is connected with actual metritis, the enlarged uterus is sensitive to pressure, and all the symptoms of chronic metritis are present. When, on the other hand, it is the mere indirect result of cervical disease, the uterus is in a passive state of enlargement only, and is neither sensitive nor painful on pressure.

As the uterine cavity enlarges along with the walls when the uterus is generally enlarged, we have in the uterine sound a valuable means of estimating, indeed of positively measuring, the size of the enlarged uterus. Should there be any difficulty in passing the sound, a small wax bougie may be used, as I have stated, and if left a couple of minutes will give a model of any incurvation that may exist.

The means of sustentation which the uterus possesses are adapted, as we have seen, to support an organ one or two ounces in weight only. If the uterus enlarges regularly, through the presence of a morbid growth in its cavity—a fibrous tumour, for instance—it may gradually rise out of the pelvis, as in pregnancy ; but when the enlargement and increase of weight are partial or concentric, and limited, the tendency is for the uterus to follow the laws of gravity, and to fall either backwards in retroversion, or forwards in anteversion, or downwards in prolapsus. The direction which the uterus takes depends on various circumstances. If the enlargement or increased weight is principally in the posterior wall of the uterus, as is often the case, or if the patient lies much in the recumbent position, the tendency is for the weighted uterine fundus to fall backwards in retroversions. If the anterior wall is the seat of enlargement, the uterus may fall forwards in anteversion. Anteversion also very frequently occurs as a direct result of the mechanical post-marital displacement backwards of the neck of the uterus, which I have described ; especially when the cervix itself is hypertrophied and indurated. The natural antelexion which I have described is also, no doubt, a predisposing cause of this displacement. When the uterine enlargement is general, not very great, and the patient is obliged to stand and walk considerably, the uterus falls directly, giving rise to prolapsus.

Partial prolapsus is one the commonest of all uterine displacements, and the study of the conditions under which it takes place throws considerable light on the displacements of the body of the uterus. Pro-

lapsus of the uterus, as distinguished from anteversion and retroversion, is most frequently the result of the increase in size and weight of the lower or cervical segment of the organ. The cervix uteri becomes enlarged as a result of metritis, or of the arrest of post-partum absorption ; or, as is much more frequently the case, of local inflammatory disease of the cervical mucous membrane. Its weight being increased, it drags down the uterus, like a piece of lead affixed to the bottom of a cork floating in water would drag down the cork. This displacement is more especially prone to occur if the floor of the pelvis, the vagina, the vulva and perineum, and the uterine ligaments generally, have been relaxed and over-distended by frequent parturition. When the cervical or vaginal mucous membrane, or both, are inflamed and tender, prolapsus is attended with considerable distress ; but when these conditions are absent, the cervix may be very low in the vagina without either pain or discomfort being experienced. This is a pathological illustration of the fact which we have already seen physiologically demonstrated—viz : that a considerable degree of uterine displacement, of any description, may exist without distress, provided there be the absence of inflammatory action.

The latero-versions which are not occasioned by adhesions, the result of pelvic abscesses, peritonitis, &c., are I believe, nearly always congenital. In some women, the healthy normal uterus lies diagonally in the pelvis, the cervix being directed to the groin, and the fundus towards the ilium. This congenital deviation is generally observed from right to left—that is, the uterus lies so that the cervix is directed towards the left groin. As I observe in my work, page 11, “ This fact which is not mentioned by anatomists, should be borne in mind, as ignorance of it may lead to error in the diagnosis of disease. Most of the lateral deviations of the uterus described by pathologists are merely exaggerations in a diseased and hypertrophied organ of this natural position or direction.” Mr. Huguier, I may mention attributes congenital latero-version to congenital shortness of one of the round ligaments.

*Therapeutically*, The secondary nature and importance of uterine displacements, when not carried to extreme degree, may be undeniably proved by the results of practical experience. For very many years I have completely ignored, as far as direct treatment is concerned, the existence of displacement in the numerous cases of uterine ailment which I have been called upon to treat. Looking upon the displacement as a mere congenital, physiological, or pathological concomitant of the inflammatory disease which I all but invariably find to exist when uterine suffering is present ; or considering it to be the direct result of enlargement of the body or neck of the uterus, inflammatory or otherwise, I have generally looked upon it as a mere symptom, and acted on this view.—Thus, as a rule, I have thrown aside pessaries, bandages and all artificial or mechanical agencies for the sustentation or straightening of the prolapsed or deviated uterus ; accepting these conditions, and the distress they may occasion, as symptoms not in themselves requiring any particular treatment beyond partial rest. My great aim has been to remove what I consider the cause of the pathological prolapsus, retroversion, or anteversion ; be that cause relaxation or disease of the vagina,



congestion, induration and hypertrophy, or passive enlargement, either of the body or neck of the uterus.

I find that when these morbid conditions can be thoroughly and completely removed by treatment, and when time has been allowed to Nature to restore the integrity and functional activity of the recently diseased organs, one of two things occurs—either the displacement ceases,—the uterus ascending to its natural position if prolapsed, and returning to its normal intra-pelvic situation if retroverted or anteverted,—or it does not. In either case, however, in the immense majority of instances, the patient is perfectly freed from pain, or even discomfort, and ceases to complain of the symptoms of uterine suffering.

When the uterus returns to its physiological position, as a result of the removal of the morbid condition which produced the displacement, the subsidence of pain and discomfort is a fact which may be explained either by appealing to the displacement, or to the inflammatory lesions which accompanied it. This alternative, however, is no longer admissible when the displacement—prolapsus, anteversion, or retroversion—remains after the removal of the inflammatory lesions; all pain and discomfort at the same time disappearing, and this I am constantly witnessing.

I speak within very reasonable limits when I say that scores and scores of my former patients, who had for years suffered from the uterine ailment before they were treated by me, are now living like other people, perfectly free from inconvenience of any kind, walking, standing, running, and going through all the ordinary ordeals of life, *although the uterus has remained displaced*. It has either remained lower than normal, or has kept in anteversion or retroversion, and in some to a considerable extent. These women are, however, otherwise sound, free from any inflammatory lesion, and the displacement consequently gives them no more trouble than do the congenital and physiological displacements which I described in my last communication.

Thus taught, thus enlightened by anatomical and physiological data, and by therapeutical experience, when women who are wearing bandages, pessaries, &c., for displacements apply to me, I commence by removing them—*temporarily*, as I tell the patients. I then study minutely the state of the uterine organs, and generally find a very tangible cause for this painful displacement in the shape of some of the diseased conditions which I have enumerated. These I make it my object to remove, at the same time carefully regulating the general health, treating all local complications of bladder, bowels, &c., and enjoining partial rest and repose. I tell the patients to bear the annoyance and pain occasioned by the displacement as a temporary symptom of their disease, as they would bear the pain and discomfort of a sprained or of a broken leg. All disease removed as far as possible, I ask for time,—for three, six, or twelve months passed at home under general hygienic and dietetic discipline, in order that Nature may be enabled to come to the patient's assistance, to fine down swelling, and to restore healthy tone and action. That period passed, if the displacement still persists and still proves a source of discomfort, I myself am ready to sanction the return to the bandages and pessaries. Not one out of fifty, however, of my

patients has ever occasion to resume these mechanical means of treatment when they have gone through the above ordeal. The necessity ceases with the diseased condition that occasioned it, and the bandages, abdominal and other, as also the pessaries, are all but invariably thrown aside forever.

In the preceding remarks I have purposely excepted severe cases of displacement. There are cases of prolapsus or procidentia uteri, in which all the means of sustentation which the uterus naturally presents have been so strained and weakened, and in which the vaginal outlet is so loose and open that the uterus will fall when the patient is in the erect position, and no treatment can restore the healthy tone of the parts involved so as to admit of the uterus being retained *in situ*. When this is the case, like other practitioners, I resort to mechanical agencies, but principally to extra vulvar pressure and support. All intra-vaginal pessaries, in my experience, give rise to irritation, and are consequently objectionable, and to be dispensed with if possible. Complete procidentia uteri is principally observed in the lower classes, and if evidently the result, generally speaking, of their habit of being up and about soon after their confinements, when the uterus is much too heavy.

Retroversion when extreme, and attended with considerable non-reducible enlargement of the uterus, is also a most unmanageable form of ailment, and must likewise be excepted from the above remarks. It may remain as a serious morbid condition when all inflammatory disease has been removed, blocking up the rectum, and occasioning considerable distress by pressure; as does retroversion in pregnancy as soon as the displaced uterus has attained a certain size. The mention of this intractable morbid condition leads me back to the consideration of Dr. Simpson's fixed intra-uterine stem pessary.

Holding, as I do, the views above enunciated, my readers will at once understand that I see no occasion whatever for the use, either of the stem pessary, or of any other, in the more ordinary cases of retroversion and anteversion. Thinking, as I do, that these displacements are often met with as mere temporary results of removable morbid conditions; or that they are either physiological conditions, or non-important traces—remains—of past pathological states, why should I torment my patients with mechanical remedies, the presence of which is often attended with suffering and accidents, and occasionally with dangerous, or even fatal, consequences? In the more severe forms of retroversion, however, to which I have just alluded, I would gladly avail myself of the stem pessary, other means failing, had I any confidence in its efficacy, and were I convinced that its use was free from danger. I have seldom, however, resorted to it, because I think I have reason, even from my own limited experience, to believe it to be inefficacious in such cases the displacement returning as soon as it is removed; and because the experience of others shows that it is a dangerous remedy; especially, I should say, in this very class of cases, in which the strain on the intra-uterine extremity must be very great.

I have always treated the uterine cavity with great respect, owing partly, no doubt, to a painful lesson which I received long ago, whilst house-surgeon to M. Jobert de Lamballe at the Hôpital St. Louis. A

fine young woman, twenty-six years of age, died under my charge from acute metro-peritonitis, the result of an injection into the uterine cavity. She was suffering from enlargement of the womb, and it was only discovered after death that the cause was the presence of a small fibrous tumour. The os internum being thereby opened, the injection penetrated freely into the uterus, and caused the inflammation which rapidly destroyed her. When, also, I began to use the uterine sound, at Dr. Simpson's suggestion, I soon found that as long as it occupied only the cervical canal there was usually no pain; but that as soon as it passed the os internum, and touched the uterine mucous membrane, there was always pain, sometimes faintness, and often a discharge of blood. These facts, combined with my theoretical and practical views, have contributed to make me very cautious in the experimental use of the stem pessary. Nor do I regret that it has been so, seeing the fatal results which have recently attended the practice of the Paris surgeons.

With their experience before me, and the knowledge that other fatal cases have occurred in England, I am inclined to think that I shall henceforth be even still less disposed than formerly to resort to the intra-uterine method of treating retroversion of the uterus. It is fortunate, therefore, for me that the experience of many years has led me to the conclusions which I have embodied in the course of this communication, viz—

That uterine displacements, in the immense majority of cases, require no special treatment; that in those extreme cases of anteversion and retroversion in which it really would be desirable to straighten the uterus by mechanical means, the intra-uterine pessary, when borne, is of but little if of any use, as the displacement usually returns as soon as it is extracted; and that in complete prolapsus vulvar bandages afford the support the easiest borne, and the most efficacious; combined occasionally with an abdominal bandage, with a view to take off intestinal pressure.—*Lancet*.

#### ART. XV.—On Antimonial Poisoning: BY B. W. RICHARDSON, M. D.

AT the present moment, when the various questions connected with the effects of antimony on the body, are being seriously discussed by the profession, it may not be out of place for me to lay before the readers of *THE LANCET* the following cases in which all the symptoms of antimonial poisoning were strikingly exhibited:—

Some years ago, in a country practice, I was called to see a delicate, strumous man suffering from pneumonia, (in the first stage,) and accompanied with pleuritis on the right side. The stethoscopic indications of these local mischiefs were well marked; there was intense pain in the chest, great difficulty in inspiration, and the general symptoms of inflammatory fever. I thought it advisable to bleed, tied up an arm, and opened a vein. The veins however, being small, and the circulation, though quick, feeble, I could not extract more than two ounces of blood,



which afforded no relief. On returning home I prescribed a pill of calomel and opium, and a mixture containing a free dose of tartar emetic—viz: one-third of a grain, which was to be taken every four hours. About six hours later a messenger came hastily to beg me to go to the patient, as he was thought to be dying from the effects of the first dose of the mixture. I started immediately; but having to ride full four miles to the man's house, I did not see him until three hours after the dose had been taken. The history of the attendants was, that about half an hour after the dose had been administered the patient suddenly became restless, cold, and faint; that he then vomited, and soon afterwards was violently purged, and that these symptoms had continued without cessation. I found symptoms myself just such as described. For the time the pain in the chest was gone, and the breathing was free, but the vomiting, the purging, and the prostration were extreme. There was little pulse; the surface was cold; the legs were cramped. The case was strictly analogous with one of Asiatic cholera, but the cause, plainly enough, was an over dose of tartar emetic. I administered a full opiate, and threw in brandy freely, waited three or four hours, and left the patient, to my great relief, with full signs of reaction. He ultimately recovered.

On reaching home again, and on making inquiry, it turned out that the dispenser of the mixture had, in a careless hurry, dropped the antimony into the bottle after filling with water. The substance was thus not freely dissolved, and some of it possibly adhered to the neck of the bottle, rendering it probable that the greater part of that which was prescribed for nine doses—viz: three grains, was taken at once.

Here, then, was a case, in which a dose of tartar emetic, not usually considered as poisonous, produced nearly fatal symptoms. A few such cases of poisoning have been collected by Dr. Christison; but, in all, the dose taken was much greater, though the symptoms were not more severe, except in one instance where forty grains caused death. Moreover, the case I have related was one in which acute inflammatory symptoms were present, and in which antimony in free doses is, as a general rule, well tolerated. Laënnec sometimes gave from two to three grains for a dose in similar cases, without any mischievous results.

A stout, active, well-built man asked me to prescribe for him for a cold, requesting me at the same time to be cautious if I intended to order him an antimonial, as he always suffered severely from the effects of that substance. I thought a diaphoretic was required, and ordered fifteen minims of antimonial wine to be taken at bed-time. There was no mistake in the dose here, for I saw it dispensed, and I knew the wine to be of proper strength. The dose was taken, and from its results I lost caste with that patient for a long time. I admit the symptoms were very severe, and such as no medical practitioner would have expected from so minute a dose. The nausea was incessant for many hours, and the prostration so great as to render the patient unable to leave his room for three or four days. There was no purging, but there was abdominal pain and griping, faintness and general exhaustion.

I instance these cases simply to show that to produce symptoms exceedingly dangerous, it is not always necessary that the doses of anti-

mony administered should be absolutely poisonous—in the common acception of the term, a poisonous dose ; indeed, I think that a moderate dose, say one-sixth of a grain, repeated many times, may in some cases induce ultimately more serious depression than a large dose administered at once, since in the latter case the emetic effect causes the expulsion of the poison at one vomit, and leaves the system free from after effects.

In regard to the action of antimony on the bowels, when given in small and repeated doses, it has always appeared to me that this effect, when it appears, is generally owing to the absence of the diaphoresis set up usually by this medicine. At all events, I think I have seen purgation follow, in patients under antimony, when the function of the skin has been checked by any accidental cause.

The question of the elimination of antimony from the body, which has been so opportunely and powerfully opened for discussion in the pages of *THE LANCET*, is one demanding a prolonged and rigid inquiry. With every respect for Dr. Taylor as our leading medical jurist, I think that most practitioners will hesitate in regard to his opinion as to the periods of time in which this substance is eliminated. As yet we have on this point nothing but analogy for a guide, and analogy is a dangerous umpire in scientific difficulties. Still, antimony as a fixed substance, cannot differ very much from mercury or iodine, both of which quit the body very slowly.

Certainly, to answer the question about the elimination of antimony at this moment, and in a definite manner, is impossible. Consider the difficulties of this subject. In the first place who knows anything about the manner which antimony is excreted, further than the bare fact that it is thrown off in the urine ? The inference is fair that it is excreted also by the skin and the bowels, but what amount of proof is there that such is the fact ? The inference is also fair, that in a patient whose assimilative and excretory powers are reduced, the elimination is much slower than in a case where the reverse obtains : but even this is a *sub judice*.

Another great question is—Does the presence of antimony, in some form or other, on the surface of the intestinal canal—i. e. mixed with the mucous secretion of that surface—give direct and conclusive evidence that the drug has recently arrived there by the mechanical act of having been recently swallowed ? In the absence of experiment proving this position, it is open to grave doubts. We know that antimony injected into a vein, or even placed under the skin by inoculation, will give rise to purging and vomiting. In such an experiment, is antimony present in the excreted matters ? If it is, then, in the same case, antimony might even be found in the stomach, though it had not been introduced into it at all by the mouth ; and further, if such should prove to be the fact, it becomes a second point of inquiry, whether antimony may not be taken in by the stomach, go the round of the circulation, and be again thrown into the alimentary canal, for the purpose of being excreted ?

I place these queries (some of which I am at the present time endeavouring to solve by experiment) before the profession, not from any

special regard to the Rugeley case, but because they open a field of physiological research which ought no longer to remain unexplored. They affect every practitioner and every patient. Here in this tartar emetic, is a drug which possibly, in London alone, is prescribed to some five or ten thousand per week—I had almost said per day—and yet we who prescribe it so freely do not know how or when it is disposed of afterwards.

HINDE STREET, MANCHESTER, 1856.—*Lancet*.

#### ART. XVI.—*Electro-Chemical Therapeutics.*

IT is a year since this Journal presumed to doubt the validity of these prevalent therapeutical novelties and experimental manipulations having for their object the extraction of metals and poisons from the human organism, by means of electricity and chemical baths. (See N. O. Med. and Surg. Jour. for September, 1855; p. 244, *et seq.*) The history of this system of therapeutics both in Europe and America contained internal evidence presumptive of fallacy though accepted by gentlemen of high scientific reputation,

Among the therapeutical experimenters in this behalf, Dr. G. Huff, of Lexington, Kentucky, is prominent, as his cases published in the New York Medical Times will show. In the same Journal for Aug., 1856, Dr. Huff has published the following article "*on the use and abuse of chemical Baths,*" which is produced below, being the more worthy of attention, coming, as it does from an advocate of this therapeutic system. How improbable so ever chemico-electrical therapeutics may appear *à priori*, experimentalists are, other things being equal, the most valuable witnesses. Ed. N. O. Med. and Surg. Jour.

I have observed, however, through life that the more valuable any discovery to society, the greater its abuse; and in no case has this been more fully verified in the healing art within the last half-century, than in the transference of metals from the human system. This branch of the profession is left entirely too much in the hands of charlatans.

Facts proving that deception has been practised to a great extent have come within my own observation; and recently the reputed experience of the editor of the *Louisville Daily Journal*, in the supposed efficacy of chemical baths, and more especially his proposed test of their action by means of ammonium, have caused great sensation in this part of the country. These circumstances led me to make an experiment with a rabbit, an animal that never had taken mercury in any form; and I herewith forward you the result, viz. a copper plate, a portion of which is nicely coated with a light metal generally known as tin. By the mercenary, a coating like this is continually palmed off for mercury taken from the system of those who have supposed themselves surcharged with that metal. Those persons who practise such feats of



legerdemain, invariably use metallic bath-tubs, the same as was done by myself in the experiment with the rabbit, and the coating of light metal upon the piece of copper is simply a deposition of tin from the tub; and the process was nothing else than electroplating, with a rabbit in the solution.

Then, again, the experience of the editor referred to proves nothing, as there was no evidence of mercury having been extracted. The sulphide of ammonium, the test relied on by him, will give a black precipitate with lead, copper, bismuth, tin, and lastly, iron, provided the free acid be neutralized, which may be done in this experiment, by adding excess of sulphide of ammonia, and then the black sulphide of iron will be precipitated as well as with mercury. The precipitate of mercury in a *dilute* solution turning instantaneously black is not characteristic of that metal, as may be tested by any person by merely putting one drop of a solution of corrosive sublimate into a tumbler full of water, and having stirred it, then adding a few drops of sulphide of ammonia, when it will be seen that the precipitate changes from a light-yellow quite rapidly to black; but unless the black sulphide be reduced, and mercury obtained from it in a metallic form, the test is not conclusive. Had a little of the supposed "black sulphide of mercury" been dried and mixed with cyanide of potassium, or carbonate of soda, and heated to redness in the sealed end of a small glass tube, the mercury, if present, would have been sublimed in metallic form in the cold portion of the tube. But it does not appear that this was done, and consequently there is no conclusive evidence that mercury was obtained from his system, but, on the contrary, he was probably deceived. The black sulphide might have been either protosulphide of tin, or of iron, which change may take place under the following circumstances:

1st.—If a patient be placed in a metallic bath tub of copper or iron, tinned, containing water with some hydrochloric acid, with a bright plate of copper under his feet, and the negative pole connected with it, and the positive pole with the bathing tub, in the course of fifteen minutes or less after the battery is put in action, the copper plate will be completely coated with tin, save the portion that was covered with his feet; and if a tumbler full of the solution of the bath be tested with a few drops of sulphide of ammonium, it will give a black precipitate of protosulphide of tin; which it would not have done previous to the battery having been put in action.

2d.—The same effect will be produced if the patient has the negative pole in his hands, with his feet upon a polished plate, *it being insulated*, and the positive pole in contact with the bathing tub. The person in connection with the negative pole merely serves as an electrode to the plate upon which a deposition of metal (tin) is wanted for deception. This experiment may be made very readily by any person having a battery of sufficient power. Persons in connection with a battery are in this way led to believe that the metal thus deposited upon the plate beneath their feet passed from their system, as they felt during the process (of electroplating) as if they were "pierced with ten thousand needles." This would answer a very good purpose if such persons would recover from their infirmities in consequence of their belief. But, alas

for the poor dupes! they remain without benefit. I am acquainted with a person that has reaped an abundant harvest within the last seven months by such duplicity. And I fear, as a general thing, the profession is not as well posted in *electro-chemistry* as they should be; as I have known some physicians to witness the *modus operandi* as aforesaid, and supposed the deposit of tin upon copper was the "Simon pure" from the human system.

3d.—If a zinc bathing tub be used under the same circumstances as the preceding, the same effect upon a polished plate will follow, and the solution will give a blackish precipitate, which is owing to the iron always being present in the commercial zinc, which latter, when pure gives from its neutral solution a white precipitate. It is always necessary to add the sulphide of ammonium in slight excess to neutralize the acid of the bath, as the iron will not precipitate in acid solutions. If there is much organic matter present in an acid bath, the sulphide of ammonium will give a dirty sulphur precipitate.

It is certain that very few persons in any community are aware that tin can be eliminated in solution from a bath-tub, and deposited upon a plate of copper within the said tub; hence the credulity of the public is taxed by those who are greedy of gain. In order to manage fairly and effectually those persons who suppose themselves surcharged with mercury, all metallic bath tubs should be dispensed with, and those only should be used which are made of a non-conducting material, such as porcelain, stone, glass or marble. A simple porcelain foot-tub is as good utensil as can be used for the purpose, as it is not at all necessary to immerse the whole person; the immersion of the feet in only a few inches of the solution being all that is required for the purpose of transferring metals from the human system.

It is truly unfortunate that the medical profession should be so prejudiced against other modes of treating diseases than such as they learned in early life, just as if science is not progressive. \*If such prejudices did not exist, the public would not suffer so much by empiricism; and if they patronize men without science, it is certain that they have lost confidence in legitimate practice. *Lerington, Ky., April, 1856.*

ART. XVII. From the *Gazette Hebdomadaire de Médecine et de Chirurgie*, of June 5th, 1856. *Note Concerning the Discovery of Atmospheric Ozone*, by M. SCOUTETEN. Translated from the French by M. MORTON DOWLER, M. D.

THE researches of M. Schönbein, those of MM. Merignue and de la Rive, and especially the important memoir of MM. Fremy and Edw. Becquerel, have established the fact, that oxygen can be positively electrized, and constitute the body called ozone by the first named of these authors. A great number of observers have shown the presence of ozone in the atmospheric air; but the divergence of their views, and

the absence of correlation between the existence of atmospheric ozone and the other phenomena of nature, have rendered these researches sterile, and caused them to feebly attract the attention of *savants*.—There have been in this behalf a mere exemplification of facts, without indicating their causes, and without an appreciation of their importance.

We have reason to hope that we have been happier in our researches in discovering, that ozone is formed ; 1st, by the electrization of oxygen, secreted by plants ; 2nd, by the electrization of oxygen which escapes from water ; 3d, electrization of oxygen given off through chemical action ; 4th, by electrical causes reflecting on the oxygen of the atmospheric air.

The following experiment fully explains the phenomenon exhibited.—Take a bell of white glass, at the summit of which let there be attached, by means of a little wax, a strip of ozonoscopic paper, suspended by a thread ; and let this bell be placed over any plant whatever, either growing in the ground or detached from the same, (the leaves of a tree will even answer for the experiment,) and let the whole be exposed to the direct solar light, and soon the following phenomena will appear ; the vapor of the water will spread in the bell ; it soon will form minute drops on the parieties of the vessel ; the paper will soon begin to be colored, at first straw colored-yellow ; will then pass to a *chamois* color ; and if there be much ozone, it will become the color of a dead leaf. At the termination of the experiment if it be steeped in water, the paper will become of a blue color, of a more or less deep shade.

If the experiment be commenced at seven o'clock in the morning, the paper will be feebly colored towards half past eight, or nine o'clock ; at eleven o'clock the coloration will rapidly augment ; and progress till three o'clock, *p. m.*, beyond that no sensible progress will be observed. The order of these phenomena is constant ; but these changes take with greater or less rapidity and intensity, according to the elevation of temperature, and the strength of solar light. We have seen the vaporization of the water, and the coloration of the paper commence about seven, and at other times about six o'clock in the morning. If we repeat the same experiment on spring, river, or rain water in vases placed on the ground, or raised on glass legs, we obtain identical results, with those furnished by the plants. A series of varied, and frequently repeated experiments have enabled us to ascertain ; 1st, that the plants as well as water, constantly furnish ozone to the atmosphere during the day ; 2nd, that this phenomenon ceases during the night ; 3d, that we may suspend this phenomenon during the day, by withdrawing the water



or the plants from the direct action of the light ; that in order to do this it is only necessary to cover the bell with a piece of linen, or a sheet of paper ; and that it may also be suspended by placing the water or plants in an apartment in which there is only a diffuse light admitted ; 4th, that ozone is not produced when boiled distilled water is used ; that it is the same when the plants are introduced in a bell filled with this boiled distilled water ; and that distilled water may be even dispensed with, the experiment succeeding perfectly with ordinary boiled water, on which there is immediately thrown a coating of oil, to prevent the absorption of atmospheric air ; 5th, that the formation of ozone equally takes place when the water or the plants are contained in a glass globe, suspended far from the ground, by a silken cord.

In relation to the chemical origin of ozone, we have succeeded in demonstrating, by the most rigorous experiments, that nascent oxygen is from ozone, and that it is to the properties that oxygen acquires by positive electrization that it owes its power of forming combinations, which with ordinary oxygen would be impossible.

Finally, ozone is formed in the atmospheric air, under the influence of continued invisible electrical currents, or by a succession of sparks of more or less strength ; as has been determined by numerous observers.

There naturally flows from these experiments new and unexpected light, at once explaining numerous points in animal and vegetable physiology, and a great number of meteorological phenomena hitherto obscure, as also chemical reactions in which oxygen plays the principle part. We shall on another occasion give the facts with their results, which they necessarily develop.

ART.—XVIII.—*Physiology. New Researches on the question of Glycogeny*: By. M. CHAUVEAU. (Académie des sciences, May 19th. 1856.) Translated from the *Gazette Hebdomadaire*: By M. MORTON DOWLER, M. D.

THE author presented to the Academy a brief exposition of the facts brought to light by recent experiments conducted by him, with a view to the elucidation of this question,—experiments made on herbivorous animals, (asses and horses) fed with their usual aliment, and on dogs, fed exclusively on meat.

*First fact.* During abstinence, even when very greatly prolonged, the sugar does not disappear from the blood of the general circulation. Thus in 100 grammes of serum, the author has found :

				ARTERIAL BLOOD	VENOUS BLOOD
				Grammes.	Grammes
Horse No. 1,	12 hours	fasting,—glycose,.....		0.080	0.066.
" "	2, 48	"....."....."		0.073	0.068.
" "	3, 3	days....."....."		0.093	0.080.
" "	4, 6	"....."....."		0.090	0.069.
Dog "	1, 24	hours....."....."		0.053	0.033.
" "	2, 48	"....."....."		0.035	0.029.
" "	3, 3	days....."....."		0.051	0.034.
" "	4, 6	"....."....."		Not Determined.	id.

*Fact second.* The sugar is always more abundant in the arteries than in the collateral veins, as is proven by the comparison instituted in the preceding table.

*Fact third.* The arterial blood, from what ever point of the circulatory apparatus it may be taken, contains always, in the same animal, the same proportion of glycose.

*Fact Fourth.* The blood of the veins, excepting that of the vena porta during the digestion of amylaceous and sugared matter, and excepting, also, that of the supra-hepatic and of the supra-diaphragmatic portion, of the vena cava inferior, do not at any period, present any appreciable difference, in relation to the quantity of glycose which it contains.

*Fact fifth.* In animals which are fasting, or are nourished exclusively on meat, the blood of the supra-hepatic veins is always more sugared than that of the other vessels, including the vena porta.

*Fact sixth.* The quantity of sugar contained in the blood passing through the two ventricles of the heart, appears to be exactly the same.

*Fact seventh.* Pure lymph is always sugared, even after a very prolonged abstinence.

*Fact eighth.* The sugar of the lymph is not absorbed into the substance of the solid tissues by means of radicles of white vessels; for glycose is never found in these tissues, excepting sometimes in the liver.

From all which has been put forth, M. Chauveau considers that the following conclusions may be drawn :

1. The herbivorous and carnivorous animals are in relation to the sugar of their nutritive fluids, in the same static condition.

2. The Sugar contained in the blood in the right side of the heart, is never destroyed by the lungs,—at least in any appreciable manner, and passes integrally into the left side, and so into the systemic aorta.

3. A certain quantity of glycose of the arterial blood disappears during its passage through the capillaries of the general circulation. The blood which is conducted from the organs to the right side of the heart, by the veins of this circulation, is therefore less than the blood of the right side of the heart.

4. The sugar of which the blood is deprived in its passage by the capillaries, does not pass from these vessels to fix itself in the solids of the economy. A part of the sugar filters into the lymphatics, incontestably transported by endosmosis, from the sanguiferous capillary system of vessels to that of the radicular extremities of the white vessels with the other elements of the plasma of the blood. The great relative proportion of the lymphatic glycose, is accounted for by the energy of the endosmotic power of this substance. Its absolute quantity, in other respects, appears very restricted if we consider the slowness with which the white blood is moved, in comparison with the rapidity of the circulation of the red blood. We know from calculation, in fact, that in allowing the most exaggerated activity to the lymphatic circulation, this circulation does not convey in a given time to the right side of the heart, a quantity of blood equivalent to the one hundredth part of the black blood which is thither conveyed by the veins; calculation equally teaches that the sugar of the lymph represents only a part of the glycose which has disappeared in the capillaries of the great circulation. As to the remaining part of this glycose, it undergoes a metamorphosis, the nature of which remains to be discovered.

5. Sent forward to the right side of the heart, the lymphatic sugar joins in augmenting the proportion of glycose in the scantily sugared blood coming from all parts of the body to this point.

6. This same blood, of the general circulation, succeeds in regaining the quantity of sugar that it has lost in the capillary circulation, by mixing itself in the posterior vena cava, and the right side of the heart, with the highly sugared blood of the supra-hepatic veins.

7. The excess of sugar in these latter vessels, not existing in the blood of animals that are fasting or nourished exclusively on meat, the conclusion must be that this fluid is charged with glycosic matter during its passage through the liver. This gland is hence found to be a true sugar generating organ; and the only organ of this nature in the economy.

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*A New Fact in relation to the Phenomenon of Glycogeny. L'Union Médicale, July 1st. 1856.*

A Chemist of Ollegio, M. Giovanni Righini, brings to light the following fact, which he, as well as ourselves leave to the physiologist to explain.

I take two persons of good physical constitution; and I put them under the use of the aloëtic ioduret of iron, and begin by using one decigramme of the substance, and increase the dose to one gramme and a



half of the metalloid daily. The agent is not only borne without inconvenience, but the individuals attain the highest degree of health, having good appetite, and are not affected with any of the inconveniences which ordinarily attend the ingestion of ioduretted preparations. I continue this treatment for two months.

During this time the aliments taken by the subjects of the experiment, appear to their own taste to be sugared; even bitter wine appears to them very sweet. The saliva possesses the same savor. I taste it, and it appears to my tongue to be sugared.

To assure myself of the presence of glycese in the saliva of the individual submitted to the experiment, I collect a quantity of the same, and add to it a quantity of the foam of beer. I place the mixture in a glass matrass, furnished with a curved lute which leads into another receptacle filled with a saturated and limpid solution of the hydrate of lime, and effervescence takes place, carbonic acid is disengaged, which traversing the fluid combines with the hydrate of lime, and forms a carbonate, precipitated in the form of spangles.

This experiment reveals to a certainty, the presence of sugar in the saliva.

This fact seems to prove, that in the liver and in the system of the vena porta, under the influence of the aloëtic ioduret of iron, and by the action of this agent on the aliment in digestion in the stomach, sugar may be produced, which may pass by absorption into the salivary glands.

I simply submit the phenomenon to physiologists, in the manner I have studied it, leaving to the French savants to deduce the consequences that may arise from it, and unless I deceive myself, to elucidate therefrom the theories which have been sustained by these masters of science with so much talent. (*La Science*, June 28th, 1856.)

ART. XIX.—*Foreign Hospitals*.—The following extracts taken, from a Lecture by Prof. Henry H. Smith of the University of Pennsylvania, containing his critical observations and matured opinions, the results of a late professional visit to Europe, will it is believed interest the readers of this Journal, being instructive as to the present economy, management, clinical instruction and practice adopted in the hospitals of the Old World, including the *personnel*, and some historical notices of, and criticism on these institutions. In the Surgical department, the *dramatis personæ* now so numerous, so able, so skilful, and withal so conservative, chary, cautious, and reserved in manual operations

with knives, saws, chisels, are here represented by an American Professor, formerly a student, recently a critical visitor to these trans-Atlantic realms of medical science. Ed. N. O. Med. and Surg. Jour.

Sailing from New York on the 16th of May, the facilities furnished by steam navigation placed me in London in thirteen days. Through the kindness extended to me by Professor Sharpey, of University College, and others, I was soon actively engaged in studying the collections and examining the wards of the various hospitals of this large metropolis. Familiar as I had been from my former visit with their arrangements, I could not but be struck with their condition at the present time. Their museums have evidently been carefully superintended and augmented, and the activity of their hospital staff has not been diminished by the changes which time has created.

The impressions made upon us in early youth by the names and presence of men who have been regarded as the lawgivers of their respective departments, are apt to induce the feeling, that the wheel of improvement will cease to advance, when death removes the power they exerted in keeping it moving. The experience of more matured life proves, however, the contrary, and the youthful observer is soon taught that there is no one whose place can be left void by death, while new generations are being vigorously thrust forward by the active hand of time. In London, as elsewhere, this is certainly true. Many of those who were most noted for the performance of their hospital duties in my first visit, had now retired or been removed by death; yet the new incumbents were not less energetic, nor had they failed, by their services, to make the proper impression on the public mind. The prominent surgeons of the present hospital staff in London, are Messrs. Cock, Callaway, Birket, and Hilton, at Guy's; Fergusson and Partridge, at King's College; Erichsen, Quain, and Sharpey, at the University College; Lawrence, Stanley, Paget, Skey, and McWhinnie, at St. Bartholomew's; Pollard, Hawkins, and Cutler, at St. George's; Simon, at St. Thomas's; Hancock, at the Charing-Cross; and Messrs. Ure and Coulson, at St. Mary's. The rivalry in good works, which has been so often noticed among these institutions, yet exists, and much of the progress of surgical science in London is, perhaps, due to the stimulus thus constantly acting upon the different hospitals. At present, conservative surgery is in the ascendant. Amputations are now much more cautiously advised than formerly; and, as the resection of joints has gained a very considerable share of professional confidence, many a poor fellow now walks on his own limbs around the streets of London, who, twenty years ago would have been a cripple sweeping a crossing, or stumping about on a wooden peg. In the upper extremities the progress of conservative surgery has also been satisfactory, and the resection of disabled elbow and shoulder or wrist-joints is now regarded as the legitimate course of practice, in diseases that were formerly treated by removing the limb. Curious affections of the bones of the wrist, which formerly resulted in the loss of the arm, are now treated by the removal only of the diseased portion, and the patient is thus enabled to retain the use of the most beautiful mechanism in the human body, as well as one which human ingenuity

has never equalled. With all the progress of recent years, mechanical improvements have not as yet produced a perfect hand.

The London hospitals are generally clean, though they are not well arranged for the purpose of ventilation; the system of a common entry to several wards, with the high windows, low ceiling, and badly constructed chimneys, yet show the influence of the erroneous architectural arrangements of a past age. Many of their institutions are of ancient date. St. Bartholomew's Hospital goes back to the time of Henry VI., who endowed it munificently. St. Thomas's was founded in 1553. Guy's is of the same period, and was endowed by a London bookseller, with the immense sum of seven millions of dollars. St. Luke's was commenced in 1751, and cost in its erection upwards of \$300,000. St. Thomas's was established in 1553, the Middlesex in 1746, the London University in 1827, and King's College in 1829. The last two, therefore, are the only institutions of recent date, and are consequently the only buildings which show the benefits derivable from the modern improvements, though they do not embrace the advantages now enjoyed in this respect by our own hospitals.

The smoke and fog of London evidently leave their stamp upon the interior as they do upon the exterior of these institutions, and an appearance of gloom is thus created in their wards, which is very different from that produced by the clear atmosphere, white walls, and white coverings in those of our own establishments. But it is not only in general arrangement that the London hospitals struck me as inferior to our own; the constitution and physical character of many of their inmates are also defective, and the result of their operations proves that they are sadly wanting in the important item of success, furnished by good constitutions and fresh air. The wide-spread English habit of drinking malt liquors, the innumerable gin palaces, and the destruction of health consequent on their living in narrow alleys, and old, badly built houses, all tend to supply the London hospitals with a class of patients not favorable to successful results. The cures accomplished by their surgeons, should, therefore, be regarded as indicating a less happy result than would ensue upon similar operations performed elsewhere; and their success in the operation of resection, may, I think, be very readily attained in the United States, in any of our own charitable institutions, and with much greater certainty in private practice. But in the elegant museums attached to their institutions, London surpasses both Paris and the United States. The formation of pathological collections, in connection with their hospitals, is a custom which has given them inestimable riches, and is a practice which we might most advantageously follow. Guy's and the University College, each have their own curator, modeller, &c., and few cases of interest are presented, or operated on, in these institutions, without some tangible record being preserved in their now magnificent collections.\* To the artistic talents of Mr. Towne, of Guy's, and of Mr. Tason, of the University College Hospitals, I am largely indebted for many beautiful and valuable duplicates, the truthfulness and natural character of which you will have occasion to notice through-

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\*King's College, the Royal College of Surgeons, &c. have also extensive arrangements of a similar character.



out the ensuing winter. The work of the former gentleman is of the very highest order, and I can give you no better idea of it than by stating that I saw one preparation of the anatomy of the head and neck, the price of which was \$2000, and which I thought well worth the sum he asked for it.

Several pleasant and profitable visits were occupied by me on this, as on the former occasion in inspecting the admirable museum of the College of Surgeons. This institution is accommodated in a handsome building of the Ionic order of architecture, which was erected in 1836, and is the depository of the valuable anatomical and pathological collection of the celebrated John Hunter, for which government paid \$100,000. No one familiar with the labors of this distinguished man, can look unmoved upon the various pieces on which he bestowed so much thought and labor, and which have elucidated so many imperfectly understood points of surgical doctrine. Although unaided by the far-seeing glass of the microscope, it is yet well known that there are few of his opinions in regard to the structure or function of certain portions of the body that have been proved incorrect by recent observers, with all the assistance furnished them in the recent improvements of optics and chemistry. To this day many of the patient, hard-studying Germans, who have done so much to modify the doctrines of Hunter's time, yet view with distrust all results that differ from his conclusions; or when satisfied of their own correctness, yet find in his opinions the basis of a truth which nothing has been able to subvert.

Among the objects incidentally connected with a professional inspection of London, and well worthy of being noted, are the British Museum and Botanical Gardens of Chelsea and Kew. The museum I dare not attempt to describe, it is too vast; but I cannot but allude to the gardens, if only in the hope of inviting attention to their utility. The garden of Chelsea owes its existence to the efforts of the Apothecaries' Company of London, who established it in 1676 as a "Physic Garden." It covers about three acres of ground, contains green houses and conservatories, as well as a hot house for aquatic plants. Two gigantic cedars of singular shape are pointed out to the visitor, which were planted in 1635. The Kew Gardens are much more extensive, and being of more recent date, present many beauties not seen in the former. This handsome spot is a favorite resort of the Londoners, who are desirous of fresh air and a change of scene, from the dirt and bustle of the overgrown city; and as all its plants are highly cultivated, and each one labelled with the botanical, as well as the common name of the species, the visitors, while enjoying the pleasure and recreation of a walk, are also enabled to gain much information of a useful and refining character. No American who visits it will fail to be struck with its neatness and well-arranged plots; nor can he avoid the wish that some of our now rapidly increasing cities should make such provision for the pleasure and instruction of the generations who will perhaps hereafter suffer, as the Londoner now does, from the evils of a thickly inhabited town, where everything is sacrificed to the grovelling spirit of trade, while health and recreation are overlooked.

Twelve hours of pleasant travel carried me from London to Paris, and again settled me in the old and familiar wards of the Parisian hospitals, in which I had formerly spent fifteen months. Time had left its stamp even in gay Paris. The surgeons of the former period were even more changed than those of London. My old preceptors, Lisfranc, Roux, Marjolin, and Breschet, were numbered with the dead. Velpeau and Civiale alone remained, and yet continue to perform actively and well the duties of their wards. Malgaigne, Nélaton, Chassaignac, Robert, Maisonneuve, Barth, &c., the young teachers of that period, are now the prominent clinical instructors of the present day, and are extending to the younger generation the benefits of those precepts which they had received from their predecessors. The hospitals, with one or two trifling exceptions seemed to have remained stationary; even the physiognomy of the incumbents of certain well-remembered beds were unchanged, and it was difficult at first to think that No. 21 of the Ward St. Martha was not the patient of a former period, so much do the suffering of certain diseases give the same impress to the features of different patients.

In comparing the present position of Paris, as a residence for the young American student, with that which it held in 1839, I am sorry to say that its advantages appeared to me to have diminished. Its anatomical theatres, with the facilities for the practice of operative surgery, seem, it is true, unchanged, but its private clinical courses have been much impaired by the decision of the Dean, which has forbidden the formation of private classes under the charge of the hospital *internes*. Formerly it was the custom for four or five young Americans to unite in a class, and under the direction of the house-physician to visit, at a private hour, the new patients who each day entered the wards, examined them carefully, and express an opinion of the nature of their complaint, this opinion being subsequently verified or disproved by the future visit of the clinical professor on the next morning. Such facilities furnished opportunities for practical instruction and experience in diagnosis which rendered Paris the great centre of medical attraction, and caused hundreds to seek its hospitals after the completion of their preliminary courses elsewhere: but now it is forbidden, and the student is limited to the public visit of each morning in connection with the crowds who follow the rounds of the surgeon. The cause of this change did not seem to be well understood, though it was said to be owing to an abuse of the privilege formerly allowed to the *internes*, and which it was thought had resulted in injury to the patient. Like every other point of clinical instruction, it was liable to abuse; but it is to be hoped that, under proper restrictions, these private courses of clinical experience may be again presented to those who can truly appreciate them. The prominent clinical lecturers on Surgery at present in Paris, are Velpeau, who yet retains his old wards at the Hospital of La Charité; Civiale, who is as usual at the Necker Hospital; Jobert, who is at Roux's former wards in the Hôtel Dieu; and Nélaton, who occupies Cloquet's chair at the hospital of the Clinic. The lectures of Velpeau continue as formerly, to be attended by numerous pupils, who assiduously collect the sentiments which are the results of the observation of an active sur-

gical experience of thirty odd years. Of all the teachers of the present day, none appeared to me to offer so much valuable matter in so few words, as this Nestor of Parisian Surgery. No opinion was uttered that was not evidently the result of a deliberate judgment, based on an experience only obtainable by one who, like him, has had the vast opportunities presented in the wards of La Charité. In all of the many visits which I paid him, I am free to confess that I was always impressed by some wise opinion, or learned some new course of reasoning; feeling, while listening to him, as if diagnostic accuracy was certain. So easy and natural did it seem to him to arrive at a correct conclusion, that all who heard him doubtless felt as Longinus has said of one who listened to a perfect piece of writing—as if they would have written precisely the same thing, or uttered the same words. Owing, I think, chiefly to the fact that he has an active participation in the final examination of the student, and that he illustrates his remarks by diagrams and pathological pieces, the clinical lectures of Nélaton are more crowded than those of Velpeau. Possessed of a clear judgment, and speaking in a calm and dispassionate voice, M. Nélaton certainly is entitled to a high position as a clinical teacher; but in giving the preference to Velpeau, all must admit that his age and experience give him a weight and authority which others who are younger have yet to establish. M. Civiale, at the Necker Hospital, seems to have remained untouched by the hand of time, and yet presents a picture of operative skill, on which most of the American students are pleased to look. His admirable dexterity in the speciality to which he has been so long devoted, has in no way deteriorated, and his polite and courteous bearing yet distinguish him from the generality of his compatriots. At present his wards are very much filled with cases of stricture, and this subject is now engaging much of his attention. The present is not the time to discuss his plan of treatment, but I hope, on a future occasion, to be able to give you a condensed statement of his doctrines and practice. Jobert, who is so celebrated for his plastic operation, is also followed by a large number of students in his clinical lessons at the Hôtel Dieu. Among these I noticed a student of the gentler sex, who seemed to be quite at home in the wards, and took care to obtain a good position near a bed, by very much the same means as the members of the class who might be thought to be made of coarser materials. Being desirous of seeing a case of plastic surgery, which interested me, I went a little in advance of the class, and stood by the bedside waiting the approach of M. Jobert. When the class had assembled around the patient, and the surgeon was exposing the face, I felt a heavy hand upon my shoulder, as of some one desirous of obtaining room to look over me, and turning partly round, found that the anxious observer was the female student, who, I was told, had so long and regularly followed the visits and operations of this surgeon. With the deference of an American to her sex, I endeavored to aid her position, though I must confess that I am not sufficiently impressed with the rights of women in such places, as to be able to regard her anxiety to obtain a sight of the patient as in any way commendable. She was spoken of by some as being an American, but I felt quite pleased, before leaving Paris, to learn she was neither



English nor American, but of Polish origin. In the wards of M. Jobert I saw the benefits of cold water, as applied to burns, scalds, &c., and was told by him that the success of this simple dressing was quite satisfactory, while it preserved the purity of the wards, and added much to the comfort of the patients. Those of you who have seen cases of extensive or deep burns, can easily appreciate the improvement made in the plan of treating these injuries, which removes almost entirely the very disagreeable odor that usually pervades them.

At the Hospital of St. Louis I had an opportunity of exchanging sentiments with M. Malgaigne, a surgeon, who is, perhaps, better known by his excellent "Manual" to the young American students who have not been in Paris, than any other. M. Malgaigne was suffering from an affection of his eyes, and looked much older than on my previous visit. As usual, he was active and energetic, and though evidently out of health, seldom failed to be at his hospital by eight o'clock in the morning, where his arrival was hailed by numerous students and practitioners. It is very evident that he is highly esteemed at St. Louis, and he deserves to be so, as few of the Parisian surgeons have done more than himself to introduce sound views of practice, especially in complaints requiring operations. His statistical tables of the results of operations for cancer, and his work on Regional Anatomy, as well as on Fractures and Dislocations, show the practical tendency of his mind. Although he has paid much attention to fractures, he is yet too thoroughly indoctrinated with French ideas of practice to please an American, few of his cases resulting as fortunately as those constantly sent out of the wards of our own hospitals. In 1839, I had seen him treating fractures of the patella by means of an iron clamp, which he hooked into the two fragments through the skin, and then drawing the plates closely together, retained them in position by means of a screw. In reply to my question, he stated that this mode of treatment was yet a favorite one with him, and made excellent cures. At present he is applying the cold steel to the treatment of fractures of the leg, and I noticed under his care a patient with a simple fracture of the tibia, in which the upper end of the lower fragment, which tended to project forward, was held down by the pressure of an iron pin or nail, made to act directly on it by a screw. The instrument fully answered its purpose, but American surgeons would accomplish the same thing simply by keeping a good pillow under the heel.

Among the medical novelties noticed at present in Paris, was the new hospital of Laraboisserie, formerly known as that of Louis Philippe, the name having been lately changed in accordance with the change of dynasty, a practice often followed in the names of the streets, &c., in Paris, when the government is desirous of obliterating all public traces of its predecessors. The Hospital Laraboisserie is a decided mark of progress in French hospital architecture. It is capable of accommodating 612 patients, and has the medical services of Pidoux, Heurteloup Pelletan, Berquerel, and others, with those of Messrs Voillemier and Chassaiguac as surgeons. Its wards are spacious, well ventilated, heated by hot air, and furnished not only judiciously, but with considerable attention to ornament. Mr. Chassaiguac, formerly so well known at the

Parisian dissecting rooms, was quite as amiable and attentive to the American students as ever. His wards are ample and well filled, but presented nothing of special interest.

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A very brief review of the labors of our countrymen will show the inquirer that American surgery participates largely in our national characteristics; that is, in invention, boldness, and independence of thought. Many of the most ingenious and original operations of our art are due to American surgeons. Witness the operations upon ankylosed joints, by Birton, of Philadelphia; the ligature of the innominate, by Mott, of New York; the removal of the lower jaw, by Deadrick, of Tennessee; the extirpation of the parotid gland, by McClellan; the extirpation of the clavicle, by Warren, &c., &c. Yet how few of our trans-atlantic brethren are fully aware of their opinions or mode of proceeding. The engagements of practice keep the surgeon too constantly and actively employed, to leave him time for the labors of composition, and our medical teachers are generally too much overtasked to be able to present in print their views on many subjects, which might with great advantage be much more widely disseminated than it is possible to do through their pupils individually. Bring the "Machine Compositoire" into the lecture-room, and print the words as uttered; let the speaker have an opportunity of revising his remarks, and then let them pass forth into the world, to extend his opinions, perhaps to give rise to new trains of thought, and shower upon mankind the relief which their ills demand, and which it is the philanthropic object of the profession to accomplish.

After thus rapidly reviewing a few of the more attractive points of a professional visit to London and Paris, it may perhaps be useful to compare the present position of these cities, in reference to clinical experience, with the facilities now afforded in our own institutions.

Owing to the changes which, as stated, have been recently made in the arrangement of the courses of instruction in the Parisian hospitals, it cannot be denied that Paris does not now present the attractions which it once offered to the medical student; and while acknowledging the benefits to be derived from a young man's study and observation of the institutions of Europe, from an intercourse with those of different political tastes, as well as from an inspection of the numerous specimens of a highly cultivated condition of the fine arts, I cannot but express the conviction, as based upon individual experience, that a sound medical education is more certainly attainable in our own institutions. The fact of the instruction in France and Germany being conveyed in a foreign tongue, is a serious obstacle to the progress of most Americans. How few of those who visit Paris, and still more Vienna, are sufficiently familiar with the language to understand perfectly the somewhat rapid enunciation of a German, or more especially a French lecturer! A misapprehension of his opinions is therefore apt to ensue, and from this must rise incorrect views of practice. In the Parisian hospitals there is also often noticed such an intense devotion to mere scientific investigations, as causes the prescriber to forget the cure of the patient, in his anxiety to study the pathology of the complaint; and there is fre-

quently more interest apparent on the part of their students, in noticing the post-mortem appearances, than there is in observing the restoration to health. In the English hospitals, as in our own, the love of science does not show itself in the same way, and autopsies are more frequently thought of rather as means of overcoming the defects of the healing-art, than as presenting opportunities of exhibiting the diagnostic accuracy of the medical attendant. I am well aware, gentlemen, that in expressing these sentiments, I am running counter to the current of what might be termed the present fashion in medical opinions; but I should be derelict to the duty of an honest teacher, if I failed to express such convictions as might tend to your benefit, especially when based upon a careful and extended examination of the circumstances alluded to.—*Am. Med. Gazette*, Aug. 1856. New York.

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ART. XX.—*A Brief Account of the Hospital at Vienna, in a Letter to Prof. Flint.* By EDWARD L. HOLMES, M. D., Buffalo, N. Y.

SIR: It is with pleasure that I comply with your request to give you some account of the Hospital at Vienna, and the plan of instruction adopted by the eminent men of our profession connected with it.

You have yourself visited similar institutions at Paris and London, and can, perhaps, understand why those who pursue medical studies at Vienna, are usually better pleased with the advantages there offered, than elsewhere.

It is certainly a great convenience at Vienna that the student finds all the material he can wish for his investigations, brought within the limits of a single hospital. This Hospital is situated a short distance without the "city" proper. Its grounds are very extensive, and entirely enclosed by long rows of buildings, like a wall. Other rows of buildings extend at right angles with each other within this enclosure, which is then divided into ten large square courts, the largest of which contains, perhaps, eight acres of land. The passage from one court to another is under broad archways. These courts are well laid out into fine gravel walks, which pass under rows of thrifty trees, in the shade of which are placed benches for the benefit of convalescent patients.—On each side of these walks are green plots, bordered by hedges.—Nearly all the courts are also provided with fountains, which are kept constantly playing. The buildings are of brick, covered with a yellowish colored plaster.

As I was informed, there are about 120 wards, accommodating 3600 patients. The wards are large, plain, tolerably well ventilated, and amply provided with conveniences for bathing. From the fact that the various diseases are so well classified in this hospital, and that the visits to the different clinics do not conflict with each other, the student can,



if he chooses, spend nearly the entire day in receiving the best instruction at the bed side. The visits are from an hour and a half to two hours in length. Early in the morning are the visits to the wards for general practice, followed in succession by those to the surgical and ophthalmic departments. In the afternoon one can give his attention to diseases of the skin, syphilis, obstetrics and auscultation and percussion. The material is ample in each of these departments.

When you reflect that at Paris all the visits to the numerous "services" at the different hospitals, situated so far from each other, are at the same hour, you can appreciate the advantage of the system adopted at Vienna. The clinical instructors certainly devote the greatest attention to the interests of the student.

Prof. Skoda has a small "service" of twenty-four beds. Every patient is thoroughly examined from time to time, and the attention of the student carefully directed to every important phenomenon. His lectures at the bed-side are very scientific, and at the same time practical. In making his examination for physical signs, the Prof. always employs the ivory pleximeter and hammer for percussion, and the common stethoscope for auscultation. He is, without doubt, a most accurate observer, and one in whose word the greatest confidence can be placed. In several particulars his views differ from those usually received by other eminent writers. He certainly has collected a large mass of facts to substantiate his theories. Few have had more opportunities than he to examine after death the effects of disease upon patients whom he had during life for a long time under his most careful observation. It is said he is a perfect "skeptic" in therapeutics, and one would almost judge so, to follow his treatment at the hospital, which is exceedingly simple. His classes seem to look upon him with the greatest reverence.

Prof. Oppolzer, clinical lecturer upon general practice, is thought by most persons to be a more pleasing instructor. No one can fail to be highly interested and instructed in listening to him. He adopts a plan similar to that formerly followed by M. Valleix, at "La Pitié," at Paris, the student being called upon to examine the patient, give his diagnosis and treatment, when the professor expresses his own views upon the case. In his wards the students have also, to a certain extent, charge of a number of patients. It is their duty to prepare a full history of the cases, adding such remarks of their own as they may choose, and from day to day report the condition of the patient. In case of death the student often prepares an account of the appearance of the different organs as seen at the autopsy, which is read on the next day in the ward. On such occasions the Prof. is often inclined to examine the student with the utmost rigor in everything pertaining to the diagnosis, treatment and pathology. As far as possible, all microscopical and chemical examinations of urine and discharges from the stomach and bowels are conducted in the ward.

While at Vienna I gave little attention to surgery, and cannot speak much from my own observation. There is one circumstance worthy of consideration, showing the encouragement offered by the Austrian government to those who are willing to devote themselves to science. From the various provinces of the empire are yearly selected twelve young

men, who, upon examination, having proved themselves worthy, are sent to Vienna to perfect themselves in practical surgery. They receive a small sum from the government. In the amphitheatre, at the hospital, they perform nearly all the operations upon the patients, the professor simply standing near to advise, if necessary. Previous to performing any operation in the hospital, these young men have almost unlimited opportunity to dissect and operate upon the cadaver. At a trifling expense any foreigner can be furnished with sufficient material for the study of anatomy and practical surgery.

The opportunities for obstetrical practice are probably inferior to none in the world. In the clinic open to students, fifteen to twenty births occur daily. The same plan of instruction at the bed-side is here given in diagnosis, as revealed by the "toucher," also in conducting labor.—The courses in instrumental delivery are superior to anything we have of the kind in this country; since in place of the "phantom," the operations are performed upon the cadaver, in which are placed the bodies of dead children, to be turned or delivered by forceps. After an individual has taken this course, he is allowed to conduct such cases of labor as require the use forceps or the perforator, which may occur during the time he is permitted to have charge of the wards. All ordinary cases of labor are conducted by midwives, except when students wish to do it themselves. At this hospital, women, as far as I have seen, are never bandaged after labor. I was also informed that this is not done in private practice. The mothers are removed in a very short time from the "labor room" to the other wards, where they usually remain nine days before leaving the hospital. I have several times seen women but a few hours after delivery, instead of being carried, suffered to walk from the room, of which I have just spoken. The children soon after birth, are carried to the hospital to priests to be baptized. They are clothed in a manner somewhat peculiar. The blanket, or quilt, instead of being sufficiently loose for the child to have free use of its limbs, is folded quite tightly around its body, confining the arms to its side and keeping its legs perfectly straight. In addition to this, the whole bundle is firmly wound round with tape, reminding one very forcibly of the pictures we sometimes see of Indian papposes. The mother on leaving the hospital, can either take her child home or leave it to be carried to the foundling hospital, where it is reared and finally put to a trade, or, perhaps enters the army.

The clinic of Prof. Hebra, for diseases of the skin, is particularly worthy of notice. He is said to be the best practical teacher in his branch in Europe. His lectures are very popular among the students. Every male patient appears entirely naked before his class, and while the Professor is speaking upon the case, passes in turn before each listener for inspection. As the number of his patients is very large, he is able to exhibit repeatedly to his class, many cases of nearly every disease, and compare one with another, when there are difficulties of diagnosis.

There are equal facilities for studying venereal diseases under Prof. Sigmund.

I had for some time been much interested in diseases of the eye. The clinics, at Vienna, are by no means so large as at Paris. Those who

visit them, however, find enough to interest, particularly in the courses for operations and the use of the ophthalmoscope, which are very thorough. These courses are given not only by those connected with the hospital, but also by Dr. Jaeger, and by Prof. Stellwag, at the military hospital. The Professors at Paris, are not in the habit of giving such courses.

In addition to being able to attend the daily exercises conducted by the Professors as I have described, the student is permitted to go round with the assistant physicians, who make their visits late in the afternoon.

Of course no one would neglect, while at Vienna, to attend, as much as possible, the post-mortem examinations. It is in the autopsy room of this hospital, that Prof. Rokitsky has made so many important investigations, the result of which is embodied in his great work on Pathology. The law permits the examination of all patients who die in this hospital. Moreover, when a case of sudden death occurs in the city from doubtful causes, the body is examined by the Professor. The average number of daily autopsies is only five, although the mortality in the hospital is much larger. A minute record is made of the appearance in each case, after which morbid specimens are carried to the lecture room to be demonstrated to the class of Prof. Rokitsky. The pathological museum, at Vienna, although not particularly large, has become, through the labors of Prof. Rokitsky, very valuable and select. The private courses given at this museum by the assistant of Prof. R., in which the preparations are carefully demonstrated, are very instructive. I might here mention a circumstance, which at first appeared to me very strange. In the wards, upon the death of a patient, whose case has offered anything of interest, a notice is at once placed over his bed, giving the hour of the autopsy. Whether the notice is read by the remaining patients with the same reflections as by the students in attendance, may be doubtful.

At Vienna, in addition to this large public institution for medical and surgical instruction, there are several other similar institutions worthy of notice. The Hospital for children, the military hospital and the military medical college, are open to students under certain restrictions. In the last institution is one of the most extensive and perfect cabinets of anatomical preparations in wax, in the world.

There is also a homœopathic hospital in the city. I was able to visit it regularly for three weeks only. I would have been pleased to do so longer, but as no remarks were ever made concerning the medicines given, and as the visits were very short, I had no means of judging concerning their therapeutics. All I can say is, that from day to day I could see no marked change in the condition of the patients. It is true, many of them slowly recovered. I saw, however, two cases of typhoid fever (which is called typhus in Vienna) and one case of pneumonia, which terminated fatally. The hospital is much neater, kept in better order than the larger one, and is under the most excellent management of the Sisters of Charity. Only four students were visiting it during the time I was there, although I was told the number was larger when the lectures were given. The patients are never much troubled during



the visits. It can certainly do no patient any good to be subjected to so many repeated examinations from the professors and students as the patients at the general hospital are obliged to undergo.

As a city to be visited merely for amusements, Vienna is by no means to be compared to Paris. But I have never seen a person who, after having spent considerable time there in study, did not regret to leave. The means of recreation are ample, and the social relations among students are pleasanter than those usually enjoyed by foreigners at Paris. The surrounding country is delightful, and in almost every direction there are numerous places much frequented by students in their excursions.—The hospital, however, to the medical man, is the chief object of attraction.

I am confident no one could visit the wards of this celebrated hospital, without feeling a regret that in our own country we have no similar institution, where those who devote themselves to the profession are able to fit themselves thoroughly, by *actual practice*, for the important duties incumbent upon them.

It is true, we have medical schools in abundance, and able teachers; a faithful student can do much in every branch of his profession. But where in our own country is there an institution in which all our young men who pass through its course of instruction can acquire practical knowledge in physical exploration, sufficient to enable him to depend, with a firm enlightened confidence, upon his own skill and judgment? Or what institution have we where the classes are furnished with such practical instruction in operative surgery, that after three years all are really competent to perform many operations that may be presented to them! The same remarks apply to our courses in obstetrics and pathological anatomy.

Physicians are expected never to make mistakes; and should one be so unfortunate as to do so, he is sure to be called to strict account.—This is as it should be, but when so much is expected, certainly sufficient opportunities should be placed at the student's command for thorough preparation.

Our general and states' governments are appropriating large sums of money for geological and other scientific investigations. Why should they not be equally liberal for the advancement of medical science, which, to say the least, is of as much importance to the public good as any other?

It is earnestly to be hoped that means may be adopted to secure more thorough practical courses in medical and surgical science, by which young men may escape the unpleasant necessity of entering blindly, as it were, upon their duties, and of gaining their experience during the first few years of their practice at the expense of the unfortunate individuals who may fall under their care.

Most respectfully,

EDWARD L. HOLMES.

Prof. Austin Flint, M. D.—*Phila. Med. & Surg. Jour.*

ART XXI.—*Ligature of the Brachio-cephalic artery.*—In a pamphlet of 24 pages, by Paul F. Eve, M.D., the distinguished Professor of Surgery in the University of Nashville, entitled, "History of the ligature applied to the brachio-cephalic artery, with the statistics of the operation," the author says, in conclusion, that

The imminent danger of these operations, viz: ligature to the brachio-cephalic and tracheal side of the subclavian artery, is simply in the impossibility to obliterate by active means the first portion of the latter vessel. The right subclavian between its origin from the innominate and the giving off of its branches, cannot be successfully ligatured. In every instance yet attempted this portion of the vessel after death has been found pervious, kept so undoubtedly by the branches derived from it; and it was this collateral circulation which preventing mortification in the right upper extremity, induced surgeons to hope for success by the operation. There is no difficulty about the carotid; that has generally been found closed with coagula in the cases examined; so also has the innominate been seen occasionally in the same condition after the operation for aneurism situated near it; it is solely the subclavian which has never yet been obliterated by a ligature at the point already indicated, and this because of its branches anastomosing so freely with the surrounding arteries, the intercostals, occipital, and even the distant epigastric. A ligature to a sound innominate might possibly obliterate it and the primitive carotid, but never the subclavian. Applied to a diseased brachio-cephalic or subclavian in an aneurismal condition, success is out of the question. It is better then under the circumstances, when other means fail, to let the patient die, rather than tie either of these arteries. \* \* \*

In every case where a ligature was applied either to the brachio-cephalic, or near its division into right subclavian and right carotid, *i. e.* thirteen cases, death has followed; even in two where the operation was abandoned, there was a fatal result in one; and in the sixteen cases one alone recovered, and in that no ligature was used, the vessel having been simply exposed, the cure in this case was spontaneous, and in all probability entirely independent of the operation.

In this collection, embracing sixteen cases in which the ligature was attempted to the arteria innominate, I have given, as far as I could obtain it, the history of each one. Other similar operations may have been made, but these are all that have been found on record.

In conclusion, after this exposition, let me ask who will again venture to tie the brachio-cephalic artery?

ART. XXII.—*Extra-Uterine Pregnancy of Four Years' Standing, the patient in the interim being twice delivered of a healthy living child.* By A. W. HEISE, M. D., of Addison, Ill.

In November, 1855, I was called to visit Mrs. Yungels, residing one mile east of Aurora, and thirty miles west of this place. Upon my ar-

rival I found the patient, a woman of robust constitution, 26 years of age, to have been 10 days since delivered of a healthy male child. The three or four days following delivery she was quite well, since which time she has had a chill every day, followed by fever and profuse perspiration. Has had the usual lochial discharge, but no secretion of milk; pulse 100 to 110; tongue red, dry, and hard; no appetite. On applying my hand to the abdomen, which is painful and irritable, I find an enlargement resembling a hard tumor, which is moveable and not connected with the integuments, commencing in the umbilical region about three inches above the umbilicus, extending downward parallel with the linea alba to the os pubis, filling  $\frac{2}{3}$  of the lumbar and iliac region of the right side. Left of the linea alba it seems to be perfectly free from any morbid growth. Examination per vag. shows the uterus in situ, contracted; the os uteri somewhat enlarged, hot, dry, and painful; vagina natural. By moving the uterus and placing the other hand over the tumor, the motion of uterus affects the tumor and *vice versa*.

Upon inquiry I was informed, that four years since, the patient supposed herself pregnant, experiencing the usual symptoms attendant upon gestation for a period of 10 months, during which time the abdomen constantly enlarged, particularly the right side, which was hard, and painful, rendering her unable to lie upon it after the third month. At the end of 10 months labor commenced, and a midwife was summoned, who after expressing her fears that the child did not "lay right," declared it was yet out of her reach, the os uteri not at all dilated, would not be delivered yet, &c.

Bearing-down pains however increased, and were finally relieved by a discharge of a large quantity of watery matter, having the appearance of beef brine, followed by coagulated blood. This not only very much relieved the patient, but diminished the size of the abdomen, and the midwife assured her she had suffered only from obstructed menstruation, and would soon recover. The abdomen gradually decreased in size for the space of three weeks, when the lochial discharge ceased, and with it the diminishing of the bowels, leaving still an enlargement of the right side which she was yet unable to lie upon.

Finding no alteration in the tumor from that time, four months afterwards she consulted a physician, who told her he could not ascertain the nature of the tumor; could do nothing for her without an operation, which, so long as she suffered so little pain, and it did not enlarge, he would not advise.

She soon became *enciente*, and in time was delivered of a large healthy child. Parturition was easy, and she soon regained her usual health, having experienced no unusual symptoms, with the exception of the total absence of any secretion of milk. The tumor had been painful during confinement, but otherwise retained its former appearance.

Eighteen months afterwards, she again became pregnant, and in November, 1855, was once more delivered of a healthy male child—both are now living.

Dr. Young, of Aurora, who attended her says, he observed nothing unusual in her case, did not notice any enlargement of the abdomen; called again, and discharged her as doing well.



On the 10th day after confinement I first saw the patient, and found her as above stated.

I prescribed those medicines which were indicated, directed emollient poultice to the abdomen, and left, with directions that if the patient did not improve, or there was any alteration in the tumor, to inform me.—Thought the tumor might be an enlargement of the right ovary, and that when the irritation of the uterus subsided and the fever abated it would cease to be painful, and she might again enjoy her usual health.

Heard no more from her until May 5, 1856. I was summoned to see her again. I found her much emaciated, exhibiting a great degree of nervous excitability, pulse 90, small and irritable—has suffered much from pain since I saw her, having been constantly confined to her bed. The tumor at the umbilicus has ulcerated, and discharges a very offensive fluid. Through the orifice, which is nearly the size of a half dime, a bone has protruded, another now closes the opening.

The case was now plain, and I advised an immediate operation. Dr. Young, of Aurora was called to assist, and upon his arrival, requested to have his friend, Dr. Allaire, of Aurora, present.

Adhesion of the peritonæum had taken place around the orifice to the extent of from three to three and a half inches. I made an incision of about three inches towards the right lumbar region, and commenced at once to extract the bones. The flesh was decomposed, but the skeleton was perfect and was of the size of a fœtus at the seventh month, though the bones appeared to have the firmness of two years' growth. Its extraction through the rather small orifice was tedious, in which Dr. Allaire very kindly and effectually assisted, Dr. Young, meantime, quieting the patient by administering chloroform. The bones of the head and pelvis were too large to pass through the incision, until they were severed by a strong pair of scissors. We succeeded in removing all the bones, together with a mass of semi-decomposed matter from the sac. The sac, which was formed of a gristly substance, and so hard as to almost resist the passing of the bistoury, seemed to have contracted close around the fœtus, and evidently had performed the office of placenta and uterus, it being connected with the latter.

The wound was simply dressed with lint, a bandage applied, and the patient directed to lie in a position to facilitate the discharges. She was left under the care of Dr. Young, and up to May the 10th, was doing well.—*North West. Med. & Surg. Jour.* August, 1856.

## ART. XXIII *Nutrition, Physiologically and Pathologically considered.*

By James Barnston, M.D.

THE ultimate atoms of organized structure are not inert, as those of the inorganic world. They exhibit an incessant or *perpetual* motion; and this is manifested in the formation, growth and decay of organized tex-

tures. In order to constitute it a living particle and one fitted to enter into and form a portion of an organized texture, it must be endowed with a power or force to actuate it. This force, which may be properly designated an *organizing agency*, is one which is essential to the very existence of an *organizable* and *organized* atom. It cannot be considered apart from, or independent of, organized matter; nor can we maintain the idea, as some physiologists do, that it is a superaddition to matter, when the latter is brought, as it were, into a condition of being organized. Matter cannot be organized or brought into a state of organization without its actuating influence. All organized matter is ultimately constituted of inorganic elements, which are consequently subject to chemical laws, and we know that chemical laws or forces cannot operate so as to impart *life* to the kind of matter over which they preside; we must therefore look for another power or force which will serve to originate and maintain vitality in matter so called organized, and it is to this power that we give the name of organizing agency, which we believe is imparted to inorganic matter so soon as it comes in contact with an organized body to which it bears a relation. It gives to that matter the power: 1st, of becoming organized; 2nd, of being or remaining in a state of organization, and, 3rd, of acting the part of an organizing agent in the conversion of matter to organization similar to that of itself. Viewing organized matter in this light, we perceive that there are two distinct classes of agencies or powers operating upon it, viz., the organizing agency on the one hand, and the chemical forces on the other—the former serving to maintain the condition of organization, while the latter on the contrary, operates powerfully to reduce or bring back the organized matter into its primitive state of inorganization. These two powers, therefore, act antagonistically in relation to each other, and it is to this reciprocal or stimulus—as a result of these powers acting on matter in opposition to one another—that the phenomenon of perpetual motion is manifested in it. As a result also of these operating powers, we observe the phenomenon of constant motion accompanied by incessant changes, which in fact, constitute the individual processes of formation, growth and decay.

The organizing agency, of which we have spoken, extends its actuating power to all kinds of matter which is organized and cannot serve to specialize the difference in the nature and qualities of the various textures. Every organized texture which exists in a living body must be possessed of distinct properties of its own to distinguish its species from that of another. These properties may be termed specific, as being limited to the kind of matter which possesses them and as acting upon it alone, so as to preserve its original nature and qualities distinct.

Keeping these details in view, we observe a wide line of demarcation between the two great kingdoms of nature, and yet a marked analogy, both in the phenomena of their respective actions and in the general and special agencies which guide, actuate and govern them, as separate systems. It is by thus contrasting their nature and operating agencies, that we can obtain a clear knowledge of the nature of organic life, or life as exhibited in an organized body; and from what has been considered, it may be safely inferred that *life*, in the acceptance of the term as applied to an organized body, is the manifestation of ac-

tivity in matter, resulting from the operation of an organizing agency on the one hand and of chemico-physical forces on the other; which, acting as they do reciprocally, serve to produce a definite relative arrangement in the particles of matter so as to form and maintain the condition of organization. Having now discussed these preliminary considerations, for the better elucidation of the process of Nutrition, let us now proceed to enter into detail respecting the nutritive process itself, as manifested to us in the simplest as well as in the more complex forms of life; and notice those intimate changes observed to take place in all textures, from the time they are becoming organized to the period when disorganization or decomposition takes place.

And, in the first place, let us remark that all organized or organizable matter is derived more or less directly from the inorganic world. Every atom, particle or cell, both animal or vegetable—simple as it is organically—is constituted of inorganic elements, which, taken up singly, combine in certain definite proportions, at the same time influenced by a new power which subjects them to an arrangement fitted for their organization. This transference of inorganic to organic matter—this transformation of inorganic elements into organized structure—is very beautifully marked out to us in the vegetable world.

Do we not find an intimate relation between the inorganic and vegetable kingdoms of nature? Have we not discovered the fact that a correspondence relates between the consumption of certain elements of the one and a proportionate appropriation and development or growth in the other? The vegetable seed sown in the soil and placed in circumstances favorable to its development, is duly excited to activity by the mutual operation, on the one hand, of that organizing agency which previously lay dormant in it, and on the other, of the forces resident in the inorganic matter which surrounds it. Thus stimulated to action, it appropriates certain materials from the soil, with which it builds up its structure. The inorganic elements taken up observe an arrangement favorable to their being organizable. They become organized, and in their organization they virtually become a portion of the vegetable, which is nourished by a process of election and assimilation. But, connected with the process of organization, we observe another change of quite an opposite nature continually going on. This change consists in the destruction of part of the organized texture, its decomposition and return to its primitive elements, which are inorganic. But this decomposition is accompanied by a process of elimination or separation of the decomposed elements from the vegetable. This process of elimination of effete matter is essential to the preservation of the organized structure, for by these means, it gets rid of matter which is not only useless but detrimental to it, and thus its organic and functional condition is preserved in a normal and healthy state. From what we have advanced, you will perceive that nutrition in its simplest form, is, in reality, a complicated process. It consists of a proportionate number of changes, necessary to the life of an organized tissue. These changes constitute individual processes, the sum of which is nutrition. These processes may be thus stated as they occur—1st. That of adoption or selection of organizable matter; 2d. That of its assimilation or its being made like or similar



to the organized matter which has appropriated it, and which in consequence of that assimilation and addition is developed and increased in size; 3d. That of the decomposition of that portion of the organized tissue which has served its functional purpose and its return to the elementary form, and 4th. Its elimination or separation from the tissue as useless and effete matter.

In the simplest and most perfect of organized structure—the *vegetable cell*—these processes are observed with united regularity. The vegetable cell is an independent living structure, and in it we observe *all* the functions of life as manifested in an organized structure—performed in all their simplicity, beauty and perfection. In it—as an independent body—all the chemico-vital processes of selection and elimination, of assimilation and decomposition, of secretion and excretion, are portrayed with that precision and harmonious perfection—observed in the most complicated living organism—the human frame. But it may be asked—Why this selection of certain elements? Why this decomposition of organized tissue? The first is, we conceive, not the result of an unknown, mysterious and indescribable power—designated, by common usage, “*vital attraction*,” called into existence by the prolific imaginations of vital enthusiasts of modern times, only calculated to limit and stagnate our research and lull us into the false security of a hypothetical doctrine, which has no foundation, but in the minds of its unequivocal supporters!

If the premises upon which we based our previous observations be correct—the only natural and indeed reasonable conclusion to which we can arrive—respecting the appropriation of certain kinds of elements by organized structure for its nutrition, is, that the same is the result of a mutual and relative bearing between the matter appropriating and the matter appropriated—the latter subject *at the same time* to a controlling power antagonistic to the power of appropriation; or, to be more explicit, in order to the appropriation of matter in due amount and quality for proper assimilation, two powers of relative bearing are requisite, which are the following viz:—1st. On the one hand, a power of receiving assimilative matter by the tissue which is to be nutrified, and 2d. An antagonistic power of *control* over the amount and quality of that matter which is being appropriated from the other. It may be likened to a process of *giving* and *taking*, two acts which are essentially different and distinct.

With reference to the second query, it is clear that since we have assigned the process of organization to an organizing agency, the gradual diminution of that agency will be followed by a corresponding gradual cessation in the process of organization, and the total loss or extinction of the former, will be accompanied or succeeded by *death* of the organized tissue. The chemical forces have now free and complete control over the dead organized tissue, which becomes speedily decomposed and disorganized, and ultimately returns to its primitive elementary condition. But what, it may be asked, becomes of the organizing influence which has thus departed? Let us again for a moment turn to our vegetable cell. We found its life constituted of a series of changes, forming, in their aggregate, the great process of nutrition. It has, however,

another function to perform ere it dies, and that is the function of reproduction, the last and all-important one, for the preservation of its own species. Its whole power is exercised in order to the 'ormation of a germ which is to be its subsequent representative—"like unto itse f."

Upon it then does the dying cell stamp its parental impression and to it impart the same organizing influence which originated and maintained its own existence. Springing up from the same species of matter, recipient of the same primary impression, animated by the same organizing influence and subject to the same special laws of nutrition, the offspring through successive generations, *lives* to belike unto the parent. It is thus we discover an intimate relation between the function of nutrition and the function of reproduction, as displayed in the simplest and most perfect of organized structure, and as such we cannot sever the one from the other, but may, without compromising our safety, extend a wide latitude to both and graduate a *centre of nutrition* into a *centre of reproduction*.

The minute details which we have just entered into will sufficiently serve to guide us in our reasonings with reference to nutrition as manifested in the most complicated of organized structure. In the nutrition and growth of a simple cell we observe all the changes which constitute the individual processes of selection or appropriation, assimilation, organization, destruction of tissue and elimination of effete matter. These individual processes considered separately, exhibit all the phenomena of the great process of nutrition, (which is used in its most extended signification), and since nutrition cannot be normally carried on in any organ, without the proper and simultaneous co-operation of all these processes, we cannot, therefore, limit our ideas of nutrition to one individual process to the exclusion of the others, but we must derive our conceptions of it, as a great complicated function from the *mutual* and *combined* workings of several different processes, which, acting as they are wont to do, in complete harmony with each other, maintain the health and normality of the whole organism. The nutrition of an intricate and complicated structural organ is in all respects identical to that of a single independent cell, with certain peculiarities, however, *incident* to its *peculiarity of texture*.

We find the plant nourished through the intervention of cells, which select, assimilate and organize materials that are subsequently carried to all parts of the plant, by means of vessels, each organ appropriating from these vessels, for itself that kind of matter which is destined for its nutrition and growth. We find a double nutrition, as it were, constantly going on in the plant, viz: the nutrition of the cells in the organization of inorganic matter taken from the soil, and the nourishment of the individual organs of the plant from organized matter, which circulates through the vessels that ramify in their tissue. The same double process is carried on in the economy of the animal organism, and for its nutrition, we find the organized elements of the vegetable most suitably adopted.

In this we discover a graduated scale of organization and a progressive advancement from the organization of the inanimate elements to the most thorough elaborated animal structure. To this end do the

three great kingdoms of nature, the mineral, vegetable and animal, unite in just and harmonious co-operation.

If we examine minutely into the nutritive process, as carried on in every organ of the human body, essentially the same elements enter into action. What are these? *cells* and *vessels*. The cells are vital bodies of which the organ is partly composed. They are situated in proximity to the vessels, which ramify minutely through the whole organ and carry in them that fluid, the blood, which contains the elements necessary for the nutrition of the organ. Now, what is the nature of that process? And what are the laws which govern it?

The phenomena of the process may be thus expressed. The fluid or blood which circulates within the vessels, parts with a certain portion of its elements—which, passing through the vessels are thus appropriated by the cells, which are in close contact with them, to be assimilated or made like the organized texture of the organ. There is in fact an *exudation* of a portion, and a certain portion only, of the contained fluid, the blood, through the coats of the containing tubes or vessels, into the cellular structure without. But why this exudation and why this peculiar portion of matter only? We believe it to be the result of two powers (adverted to before), which continually operate, so long as the phenomena exist. These two powers are, one the power of *appropriation* on the part of the tissues, and the other the power of *control*, on the part of the vessels. The power of appropriation on the part of the tissues, merely serves to draw fluid from within the vessels. If it acted alone, it would undoubtedly draw every constituent of the blood (with the exception probably of the blood globules which cannot pass through, the obstruction being mechanical) as may be proved by injecting a fluid of the same consistence and density as the blood, into the blood vessels of the dead body, when it will be found that every constituent of the fluid without discrimination, is exuded through the vessels of the organ into its proper issue. How is this to be explained? Only, we conceive, upon the supposition, that there is absence in the dead body of that controlling power which exists in the living and modifies the passage of the fluid elements of the blood; and this, coupled with the circumstance, that diminution or loss of this controlling power in disease is followed by an abnormal exudation as to kind and quality, proves the absolute necessity for the constant operation of this power to control and modify the exudation of certain kinds of fluid matter from the blood in order to the proper nutrition of any given tissue. In short, we conceive, the functional office of this controlling power to be the allowing to pass nutritive matter alone, and the keeping back that portion of the blood, which, if exuded, would act detrimentally on the tissue.

The appropriation of fit materials and the assimilation of these by the tissue which appropriates them do not constitute the whole process of nutrition. In order that nutrition of an organ be maintained healthy and normal, there must be a process of destruction of the older tissue, and its subsequent elimination— to give place to the more recently organized portion. As there is a constant *building up*, so there must be a corresponding process of *breaking down* of tissue.

To eliminate or carry away this broken down tissue every organ is supplied with another class of vessels, whose sole function is directed to



draw off the effete matter, which can serve no further purpose in the economy of nutrition, and if retained, would upset the balance of standard healthy nutrition.

Viewing nutrition in this light, we may safely say that every organ in its nutrition, is in relation to itself, its own eliminator—nay more and equally true, as has been well remarked by Paget—every organ in its nutrition, stands in relation to the whole body, as an *excretory organ*. As a reasonable deduction founded upon this generally received doctrine, we may advance a step further and maintain that every organ in relation to its ultimate nutrition is *extra-vascular*. However minute the ramifications of vascular supply through an organ, its own peculiar and proper tissue is extra-vascular. Every individual cell which appropriates matter from the blood vessels, stands without the vessels and is in reality an extra-vascular body. In general the ultimate elements of an organized texture are in close proximity to the coats of the vessels which ramify throughout the whole organ, but in some few cases these ultimate elements are situated at a comparative great distance from the vessels from which they obtain their nutritive supply. The best example of this is cartilage—the ultimate elements of which are placed much more distant from the source of their nutritive supply than those of any other organized structure. But cartilage cannot be considered a non-vascular structure in contradistinction to other tissues, for all other organized structures are in their ultimate nutrition extra-vascular structures, and as such their ultimate elements in the organic sense of the term must be considered non-vascular.

Having now presented these observations on the general physiology of ultimate nutrition, let us advert but briefly to those pathological conditions which serve to implicate and disturb the healthy nutritive process, and let us remark in the first place, if the views which we have advanced in reference to the laws which govern healthy nutrition be correct, it is evident that any alteration in these laws will be followed by a change in the nutritive process—a deviation in the one will lead, as a natural consequence, to a corresponding deviation in the other. But in order to understand cause and effect, let us examine into the phenomena of a pathological lesion of nutrition.

Now in all pathological lesions of nutrition there is, in general, a manifest change in the quantity and quality of the normal exudation—we say normal exudation for it is probable, nay almost placed beyond a doubt, that all the elements which enter into the nutrition of an organ exist in, and are derived from the blood. In almost all lesions of nutrition there is an increase in the amount or quantity of the normal exudation. Again, as a general rule, pathological processes are accompanied by an alteration in the quality of the normal exudation. These two conditions, viz: *alterations in the quantity and quality of exuded matter* may exist to a greater or less degree either separately or combined. We have said that the elements of pathological exudation all exist in the blood. Thus we find among the elements of the blood which are exuded water, which exists in the blood plasma to the average extent of 880 to 906 parts in a thousand, is often increased to the amount of 970 to 988 in a 1000 parts in recent pathological exudations. Again the albumi-

nous elements of the blood may be exuded abnormally in the form of complete solution, or in form of solution which coagulates spontaneously, or in the form of viscid matter calloid or gelatiniform.

Now the only reasonable explanation we can give for the phenomena of pathological nutrition, is by supposing the elementary powers of nutrition to be at fault. For since we believe the normality of the nutritive process to depend upon the mutual and constant operation of existing forces which govern that process, any alteration in the power of these forces will be accompanied by alteration in the process itself.

What is the alteration in these powers or forces? It consists in a *diminution* in the *amount* of elective and controlling power of these forces. The greater the diminution of controlling and elective power, the greater will be the change in the quantity and quality of the exuded matter. It is thus that we conceive every morbid process to be *retrograde*; that is to say, it is the result of a *diminution* of the controlling power of the vessel on the one hand, and of the appropriating power of the cells in the tissue on the other. Thus, therefore, in every morbid nutritive action there is a *lowering* of the vital forces or power—a marked deviation from the standard of health and a nearer and nearer approach to death.—*Montreal Monthly Jour. Med. & Surg.* Aug. 1855.

## REVIEWS.

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REV. I.—*On some Diseases of Women, admitting of Surgical treatment:* By ISAAC BAKER BROWN, F. R. C. S., Surgeon Accoucheur to St. Mary's Hospital: Vice President of the Medical Society of London, &c. Pp. 276 8vo Phil. Blanchard & Lea. '56

MR. BROWN in this able work, treats of "some of the surgical diseases of women," namely, ruptured perineum, prolapsus of the vagina and of the uterus, vesico-vaginal and recto-vaginal fistulæ, lacerated vagina, polypus of the uterus, stone in the bladder, vascular tumor of the meatus urinarius, imperforate hymen, encysted tumor of the labia, diseases of the rectum resulting from certain conditions of the uterus, ovarian dropsy, together with an appendix or rather an addendum upon kindred subjects. These conditions and maladies are viewed by Dr. Brown in a practical manner, and are illustrated by numerous interesting cases. He has seen much, and described well. He teaches by precept and example, that is, his doctrines are illustrated by carefully observed, and well written cases amounting to LIX, the details of which bear internal evidence of authenticity, and ample experience, and at the same time afford the reader the means of judging of the diseases described, the curative means used, and of the results which followed, whether favorable, or otherwise, including a number of post-mortem examinations.

The longest article in this book, which, indeed, is disproportionately extended as compared to other articles, fills more than 100 pages, being on *Ovarian Dropsy* and *Tumors*. Mr. Brown appears to have made Ovarian diseases a study since 1830, having written various articles upon the methods of its treatment and encountered occasionally adverse criticism thereupon. Without having condemned either the abdominal section in Ovarian dropsy, or extirpation in Ovarian tumors, he has recommended some less hazardous plans to be first tried, which have sometimes proved successful. In this behalf, however, there is little or nothing which can be regarded as either new or satisfactory. In simple cases of Ovarian dropsy, he prefers and practises the excision of a portion, rather than the whole of the cysts or ovariectomy proper. The latter, notwithstanding its increased hazards, he regards as the only absolute security against a return of the malady, and as being more and more worthy of the confidence of the profession, formidable as it truly is.



Mr. Brown's surgical, critical, and operative history of lacerations of the perineum is valuable being suggestive and encouraging. This accident, which in its worst form is more distressing than almost any in midwifery, rendering life a burden, excluding the patient from society, and making her loathsome to herself and others, was not long ago virtually deemed incurable.

Mr. Brown gives the histories of XVIII cases of perineal laceration, in which he performed surgical operations, and which, though not invariably successful, are among the most favorable results of which surgical science can boast. This most interesting article occupies about one-fourth of the volume.

Mr. Brown rejects pessaries, as well in prolapsus as in procidentia uteri.

In the treatment of Vesico-vaginal fistula, Mr. Brown has followed the method of Dr. J. M. Sims, of New York, "with varied success." He says, "on the whole, I am convinced that it [*the clamp suture*] is the best form of suture that we yet have."

Among the various forms and complications of prolapsus of the vagina, nothing is said by Mr. Brown concerning that variety caused by the descent of the intestines into one of the labia, carrying before it a portion of the vagina. This kind of hernia appears to have been generally ignored by writers. The Editor of this Journal has been called to treat several chronic cases of this form of hernia, first in Virginia, and then in New Orleans. Position, bandages, and other palliations were advised, pessaries being worse than useless. In these cases, the abdominal and pelvic viscera having accommodated themselves to each other and to the vacuum left by the displaced organs, refuse to tolerate the presence of the extruded organs when returned.—EDITOR.

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REV. II. *Vesico-Vaginal Fistula, with an account of A New Mode of Suture*: By N. BOZEMAN, M. D., Montgomery, Ala. Pp. 29. 1856.

THE *Journal de Médecine de Bordeaux* for July, 1856, in a commendatory Review of this paper, justly congratulates *The Louisville Review of Practical Medicine and Surgery*, upon its inauguration by a memoir of so much worth in practical surgery.

It is not necessary, nor is it intended to review Dr. Bozeman's paper on this occasion, although copious extracts from it will be given illustrative of its general import, omitting, however, the description of the

*Button Suture*, with its applications, which is, indeed, the fundamental peculiarity of Dr. Bozeman's procedure. The description without the illustrative cuts (which are not obtainable) would not convey information sufficiently precise and clear to be useful to the operator.

Drs. Sims and Bozeman, both citizens of the town of Montgomery, Ala., (the former being now resident in New York,) stand, with Dr. Mattauer of Virginia, at the head of their profession in so far as the surgery of Vesico-Vaginal Fistula is concerned—a difficult branch of surgery, which, until recently, was viewed with dismay and despair by the most eminent operators. Within a few months last past, it is probable that these gentlemen have performed, if not a greater number, yet more successful operations for this deplorable malady, than all the other surgeons in the great capitals of Europe and America. Henceforth, Montgomery, Alabama, will be known as a bright spot on the surgical map.

Nevertheless this operation can neither be regarded as one requiring great anatomical knowledge, nor as endangering the life of the patient by unskilful conduct on the part of the surgeon, as in many of the capital operations.

It is believed that within a very few years, Dr. Mattauer, of Virginia, and Dr. Sims and Dr. Bozeman of Montgomery, Alabama, not to name other American surgeons, have operated upon nearly 100 persons.

Now the question presents itself—how comes it to pass that this most distressing lesion was scarcely ever heard of 20 or 30 years ago? Were the teachers and writers of the last generation so remiss and derelict in their prelections, observations, and writings, as to impress upon their pupils neither the means of prevention, nor any methods of curing so distressing a malady? Were they warranted in ignoring its very existence, had it been as prevalent in former times as it is in the present day? Did they conspire together in a disreputable *suppressio veri*?

Dr. Bozeman says: "It would appear, from the silence of the older authors in regard to vesico-vaginal fistula, that it was a subject to which they paid little or no attention. But it would not be a fair inference from this circumstance, that the affection did not exist, or that its subjects did not apply for medical or surgical aid. The practice of obstetrics was less understood then than at present; and it is reasonable to suppose that accidents resulting in fistula were comparatively more frequent. Surgeons must, therefore, at a very early period, have known something about it; but, being unable to afford the necessary relief, they probably supposed that it would be a waste of words to record anything upon the subject. And, indeed, in turning to the written experience of more modern surgeons, we find that no advance was made toward the proper understanding and treatment of the disease until within the last quarter of a century."

Can Dr. Bozeman's explanation apply to those great obstetrical masters who have just descended to the tomb, brilliant as autumnal setting suns, unclouded by ignorance, fraud, or deception? Dr. Bozeman conjectures that these men of unexampled knowledge, "supposed that it would be a waste of words to record anything upon this subject, being unable to afford the necessary relief!" Did they thus ignore analogous maladies because they were unable to indicate with certainty the means of cure, as cancer of the womb and the like? Were they ignorant of this most indescribably distressing malady, worse than death, which renders it impossible for a female to mix with society—which dooms her to utter seclusion, and to intolerable urinous stench, to unutterable wretchedness, and a hopeless life of pain? There is but one probable conclusion which presents itself, namely, *Vesico-Vaginal*, *Urethro-Vaginal*, and *Recto-Vaginal Fistulae* are now more prevalent than formerly, be the cause what it may.

A meddlesome midwifery, *unjustifiable* attempts to hasten delivery, the premature rupturing of the membranes, the untimely and unnecessary administration of ergot, a distended bladder, the unskilful and injurious manipulations with and without instruments intended to expedite the exit of the child, together with pessaries, are doubtlessly causes which contribute to this dreadful casualty. To use a new cant phrase, a "*fast*" or "*progressive*" *midwifery* is at once popular and bad! The earlier stages of labor, which may in many cases last for days, with danger neither to mother nor child, are interfered with, and the head being brought down, becomes impacted, causing injurious pressure which ultimately causes gangrene in a portion of the maternal bladder, urethra or rectum. There is no doubt that often the duration of labor upon the whole may thus be shortened but as it regards the latter stage wherein the pressure is greatest, there is an unusual delay in many cases, and consequently an increased danger to both mother and child. A tedious natural labor in which there is neither hæmorrhage nor exhaustion on the part of the mother, nor impaction of the child in the inferior strait of the pelvis, rarely requires any manual aid whatever.

In midwifery, at least, "*fast, progressive*" people, including chloroformizers, should fall back upon Nature, unless in extraordinary cases wherein well-defined indications call for the interference of art. "Faith, without works," in the early stage of labor, will for almost all cases, fulfil the fundamental rule of general, as well as obstetrical therapeutics, namely, *do no harm*.

The accoucheur is summoned to go perhaps from 5 to 20 miles into the country. The labor is regular. The *os tinca* is dilating. **Twenty**



anxious lady-friends are present, who, with the patient ardently desire speedy delivery. The *fast-slow* obstetrician will, perhaps find in a few hours that nothing is required. The delay of a day, or a week, or even a month elapses before efficient, final labor takes place. In such cases, (and they are not rare) by manipulation, by the rupture of the membranes, by ergot, and the like, it is sometimes possible to excite true, yet untimely labor which precipitates the child's head or other part into the pelvic cavity where it is long impacted before delivery can be effected, and where, if it perish not, its delay is likely to injure the mother, as suggested already.

Can it be that science "progresses" in a circle? Can it be that an increased and an increasing knowledge of midwifery and midwifery-instruments, can by any possibility be connected with an increased and increasing multiplicity of evils to parturient women? It is no exemplification of the law of compensation to assume that because surgeons have improved their operative methods, the increase of *fistulae*, must, therefore, be expected, including the red hot or white hot iron, caustics, knives, scissors, needles, clamps, button sutures, etc.

Dr. Bozeman's historical and operative appreciations of the surgical treatment of vesico-vaginal fistula, the following extracts will sufficiently show :

*Treatment*.—Until within a few years past, so uniformly unsatisfactory were the results of the treatment of vesico-vaginal fistula, that many surgeons entirely despaired of ever being able to offer the poor afflicted subjects of this malady any hope whatever of permanent relief. But still, from time to time various plans were proposed, some of which proved more or less beneficial, and others again entirely useless. Among the former was cauterization with the hot iron, which having produced a few permanent cures, and mitigated many cases, was a step considerably in advance of the old practice of pronouncing all cases incurable. Indeed, this operation is still viewed by many otherwise intelligent surgeons, especially in Europe, as almost the only hope of relief. Among its most strenuous advocates may be mentioned M. Dupuytren and Mr. Liston, who, although now dead, are nevertheless considered as the representatives of modern surgery.

"In France the *suture* has undergone many ingenious modifications. M. Velpeau remarks upon this subject, that, 'To abrade the borders of an opening when we do not know where to grasp them, to shut it up by means of needles or thread when we have no point apparently to secure them, to act upon a moveable partition placed between two cavities hidden from our sight, and upon which we can scarcely find any purchase, has appeared to be calculated to have no other result than to cause unnecessary suffering to the patient' 'M. Vidal (de Cassis) is not less discouraging. His words are : 'I do not believe that there exists in the science of surgery a well-authenticated complete cure of

vesico-vaginal fistula, a fistule due to a loss of substance from the bas-fond of the bladder.' Of the success of the autoplasmic operations devised and practised by Jobert and Gerdy, we have no positive information. The former surgeon also operates with the suture, and there is no reason to believe that he has met with much more encouraging results than any of his European brethren.

"Turning now to Great Britain, what do we find, has been accomplished there in the treatment of vesico-vaginal fistula? London surgeons, with all their hospital advantages, until within a very few years past, gave this subject little or no attention. Neither Sir Charles Bell, Sir Astley Cooper, nor Mr. Samuel Cooper have so much as alluded to it, either in their writings or lectures. Mr. Robert Liston devotes to it but one paragraph, and, as it appears, attached more importance to what could *not* rather than what could be done by the surgeon. 'Attempts,' says he, 'have been made to close the aperture by paring the edges, and then inserting sutures; but this is a proceeding both difficult in execution, and not likely to prove successful.'

"Having thus briefly glanced at the state of surgical science, in reference to the disease in question, in Germany, France, and Great Britain, let us turn to our own country, and see what has been done there. And here I may state, without the least fear of contradiction, and with no little national pride, that the surgeons of the United States have so far outstripped their European brethren as to place this horrible complaint, which the latter have declared incurable, upon a par, as regards the probabilities of successful treatment, with accidents of like severity affecting other parts of the body.

"Dr. Mettauer, of Virginia; Hayward, of Boston; Pancoast, of Philadelphia, and J. Marion Sims, late of Montgomery, Alabama, but now of New York, are the only surgeons in this country, as far as I am informed, who have paid special attention to the subject of vesico-vaginal fistula: and, in noticing their respective operations, it will suit my purpose to speak somewhat in detail concerning the different modes of closing the fistulous opening, as herein lies the superior advantages of one operation over another, as I shall presently endeavor to show.

"Dr. Mettauer operated for the relief of this malady as early as 1830 \*. His method consisted in paring the edges of the fistulous opening, and maintaining them in contact with interrupted sutures made of lead wire. These he carried entirely through the vesico-vaginal septum, at a distance of an inch from the denuded borders. A sufficient number of them having been introduced, the ends of each wire were separately twisted together until firm coaptation of the edges was effected. The twisted extremities were afterwards cut off a short distance exterior to the vulva. On the third day the sutures were tightened by twisting them again; and about the tenth day they were removed. Such was the original method employed by Dr. Mettauer, and, with but little if any alteration, is the one he still practises. He has performed it quite a number of times, and claims considerable success."

Dr. Bozeman refers to the *Virginia Medical and Surgical Journal*, of June, 1855, wherein Dr. Mettauer's contribution alluded to, appeared.

\**Virginia Medical and Surgical Journal.*

One would naturally expect that the statistical account there given would not be suppressed, inasmuch as Dr. Bozeman appears very anxious to record the numerical history of this operation for comparison.

Dr. Mettauer rejects the clamp suture, preferring the interrupted leaden suture. He strongly objects to Dr. Sims' method, at considerable length, on practical grounds, after having tried it unsuccessfully in three cases. He adds :

"It has been asserted by some of the journalists of the North, in support of the safety and infallibility of the clamp suture, that laceration of the recto-vaginal wall was incurable until that method of reuniting the parts was adopted. This is certainly an incorrect statement, because so early as 1832, I treated a case of this laceration with complete success by the use of the leaden wire interrupted suture, which case was reported in the 25th number of the American Journal ; and, subsequently, I have reported other cases of that disgusting affection, treated successfully with the same kind of suture ; in all having treated and cured *twenty-seven* cases with the leaden interrupted suture alone, without the least difficulty."

Dr. Bozeman continues :

"Dr. Hayward, without any knowledge of what had been done by Dr. Mettauer, performed his first operation in 1839, and published it the same year.\* He has the credit, I believe, of having been the first to operate successfully in this country ; but there is no doubt that Dr. Mettauer preceded him by several years, although the latter did not publish his operation until 1847. The peculiarity of Dr. Hayward's procedure consists in the mode of getting at the parts. He first introduces into the bladder, through the urethra, a whale-bone bougie, with which, as a lever, the symphysis pubis serving as a fulcrum, he next brings down the base of the bladder to the vulva, and thereby exposes the fistula fully to view. He then pares the edges of the openings, and brings them together by the ordinary interrupted sutures, which, in their introduction, are not allowed to penetrate the mucous coat of the bladder. The operation being thus completed, and the bougie removed, the bladder is permitted to return to its proper place, and the sutures are allowed to remain until they become detached by ulceration.

This is the method now recommended by Dr. Hayward, although formerly he was in the habit of splitting the edges of the fistula, so as to present a more extensive surface for agglutination, and at the same time lessen the chances of piercing the mucous membrane of the bladder in introducing the sutures. He also directed the bladder to be again depressed after a certain number of days, and the sutures removed. Dr. Hayward has performed his operation twenty times, but with no very great success, having cured, I understand, but three cases permanently.†

"Dr. Pancoast's method consists in adapting the edges of the fistula to each other on the principle of the tongue and groove. The posterior border he splits to the extent of half an inch, and pares the anterior to

\* Am. Journal of Med. Sciences.

† Surgical Reports.



the shape of a wedge. The former is then made to receive the latter. In this way four raw surfaces are brought in contact, and held in this relation by his plastic suture. How much success Dr. Pancoast has had by this method I am not prepared to state. He reports, in the *Medical Examiner*, for May, 1847, two cases cured in this manner by himself.

“Lastly, we come to consider the method of Dr. Sims, a description of which I deem altogether unnecessary; for, being generally approved by the profession, it is well understood by every one interested in such matters. Suffice it to say that the peculiarity, as well as the great advantages of Dr. Sims’ method are to be found in his clamp suture.

“Considering the comparatively small measure of success obtained by Drs. Mettauer, Hayward, and Pancoast, it would be useless to enter into a discussion of their relative merits, as I suppose that no one in this country at least, will be likely to adopt the method of any one of these gentlemen, with the great advantages of Dr. Sims’ method staring them in the face. But it is to the latter that I invite attention, and, however bold or fool-hardy the attempt may appear, I hope to be able to show that the clamp suture has serious objections that may be entirely obviated by the procedure presently to be described. In saying this, however, I do not wish to be understood as attempting to detract from the great credit due from the profession and the public to Dr. Sims for his untiring perseverance in bringing his method to its present high state of perfection. I consider that this gentleman is fully entitled to more than all the praise that has been bestowed upon him, both in America and Europe. To the honor of his professional brethren in this country, it may be stated that no one has been found who has not gladly accorded to him the high distinction that he at present occupies. I am sorry that the same cannot be said of European surgeons in general, for, with the exception of Mr. Erichsen, Mr. Brown, and Mr. Drutt, of London, no one on the other side of the Atlantic has, to my knowledge, proved sufficiently frank to do full justice to Dr. Sims’ claim. Fully impressed, therefore, with the importance of the position I assume in attempting to show that the clamp suture is objectionable, I proceed to the task, actuated, as every inquirer after truth should be, by no other motives than a desire to make facts and principles subservient to the great ends of science.

“In the first place, then, Dr. Sims states that the ‘clamp suture lies embedded in the tissues for an indefinite period without danger of cutting its way out as do silk ligatures.’ This proposition is doubtless true, so far as it implies that the clamp suture is much less liable to cut out than silk ligatures: but the question is, does not the clamp suture itself irritate and very often cut out? Dr. Sims says not. My experience with it, however, has led me to a different conclusion. I have several times seen it ulcerate out, and that too within five or six days, thus entirely defeating the object of its application. When there is much dragging of the parts, this is almost sure to occur. The liability to this accident I have found greatly increased by an indurated condition of the tissues, which very often exists on one or both sides of the fistulous opening. The ill consequences of the ulceration occasioned by one or both clamps are sufficiently evident. Other fistulæ are in this way liable to

be formed, as occurred in a case alluded to by Dr. Mettauer,\* and even if this does not take place, the morbid action may extend to the raw edges of the opening, and thus interfere with the healing process. Gangrene and sloughing of the included parts may take place also when the clamps are applied with too much force.

"Another objection to the clamp suture consists in the fact that to apply it properly requires more experience than most practitioners of surgery can be supposed to possess. The operator must be able to judge of the condition of the tissues, whether indurated or not, and whether this condition is confined to one or both sides of the fistulous opening. If duration exists, he must know what precautions are to be observed in the arrangement of the clamps, and the dangers resulting from a neglect of the precautions. Many failures, I have no doubt, can be referred to a want of familiar acquaintance with these matters, which, as just stated, is to be gained only by much experience.

Another, and the greatest objection to Dr. Sims' method, is the frequent impossibility, in cases of double fistulæ, of applying two sets of clamps at the same time. This I regard as a consideration of the utmost importance. If two fistulous openings are found to exist, and circumstances will allow of but one being closed, failure is almost sure to follow, owing to the escape of urine through the other into the vagina, and its contact with the denuded edges.

"Still another objection is the impossibility of making the sutures act only in one direction. They have all to be introduced exactly alike; each wire must be entered on the same line, at a proper distance from the edge of the fistulæ, and brought out in a similar manner, so that when the shot are secured in their places, the same amount of traction, and in the same direction, shall be exerted upon each suture. Unless these precautions be observed, the clamp will not lie easy, and is liable to do injury.

"Such I conceive to be the most important objections to the clamp suture. There are others of a minor consideration, but they need not be mentioned here.

"Very soon after I began to employ this suture in the treatment of vesico-vaginal fistula, I discovered these faults; but it was a long time before I could believe but that it was the best and surest plan of procedure that could be adopted. Failure upon failure occurred, when from the favorable nature of the cases such results were not to be expected. Finally a case of double fistulæ came under my care. The two openings were in close proximity, and the long axis of one was at right angles to that of the other, thus precluding the possibility of using two sets of clamps at once. Thus circumstanced, I adopted the only alternative, which was to close one and leave the other for a future operation. Accordingly I applied the clamps to the superior aperture, as the peculiar nature of the parts required that this one should be closed in order that a resting place might be formed for one of the clamps in the next operation. On the tenth day I found upon examination that the apparatus had cut out entirely. The failure I decided to be due to the injurious effects of the urine upon the denuded borders of the fistula, and upon

\* Op Cit.

the raw surfaces produced by the pressure of the clamps ; and I became furthermore satisfied that I should never be able to cure the case, unless I could invent some contrivance by which either to close both openings at one operation, or to afford complete protection to the denuded edges of one during the healing process. The thin and raw edges of the fistula when brought together by the clamp suture under such circumstances, are necessarily acted upon by the poisonous urine on both the vesical and vaginal surfaces, union by the first intention being thereby rendered very improbable, even under auspices otherwise most favorable, and in the majority of instances almost clearly impossible. To contrive an apparatus that would fulfil one or the other of these indications required, I supposed, much more inventive talent than I possessed ; and after a little thought, I abandoned all hope of providing anything that would answer the purpose. Sometime afterward, however, while buttoning my vest, it occurred to me that a somewhat similar process might be applied to such cases as the one above cited, and after turning the matter over in my mind, I determined to put the idea in practice. Accordingly I made a contrivance on the button principle, and applied it in a case where the clamp suture had failed three times. The result was, as it has been every trial since, as satisfactory as could be desired.

"With such flattering results in its favor, I propose now to offer the operation to the profession for what it is worth. It will be found to be simple and easy in its performance, applicable to the great majority of cases, and devoid of any inconvenience to the patient. From its construction, mode of action, and the circumstances which led to its adoption, I shall call it the *Button Suture*. It is, however, only a modification of the twisted, as the clamp is a modification of the quill suture. After a brief description of the apparatus, and the mode of applying it, I shall add the details of four successive cases requiring seven operations in which I have employed it without a single failure.

"The essential parts of the apparatus consist of wire for the sutures, a metallic button or plate, and perforated shot to retain the latter in place. The wire should be made of pure silver, about the size usually marked No. 93, and properly annealed. A length of about eighteen inches should be allowed for each suture.

"The button possesses several peculiarities. It may be made of either lead or silver. The former, hammered out to the thickness of 1-16th of an inch, answers the purpose tolerably well. The latter can be made still thinner, and does better on several accounts ; it is lighter, less likely to yield under pressure, admits of a higher polish, and allows the wire to be drawn through the small holes without dragging.

*Summary.*—My experience with the button suture, has, I think, established its superiority to the clamp suture in the following particulars :

1st. It is simpler in its construction, and applicable to a greater number of cases.

2d. It affords complete protection and perfect rest to the approximated edges of the fistula.

3d. If two fistulous openings exists, one or both may be closed at the same sitting, according to the inclination of the operator or patient, without reference to the condition of the parts.



4th. The introduction of the sutures does not demand the same exactness in regard to the position of the points.

5th. The independent action of each suture renders parallelism unnecessary, and thus gives the operator the liberty of introducing them in whatever direction may best suit his purpose.

6th. If perfect coaptation be found wanting after the edges of the fistula have been brought together, it is not necessary to remove the sutures, but simply to loosen them in order to perfect the paring.

7th. The apparatus does not irritate, it matters not what the condition of the parts may be, provided they are not in a state of progressive ulceration or inflammation.

8th. The apparatus requires to remain in position seldom longer than ten days.

*Conclusion.*—Having now finished a description of my mode of treating vesico-vaginal fistula, together with the narration of all the cases in which it has been employed, I propose, in conclusion, to compare its results with those obtained by other methods.

Since the 12th of May last, I have performed seven successive operations, without a single failure. This is the amount of my experience with the button suture. Now to form anything like a proper estimate of the several modes of treatment heretofore recommended, it is necessary first to ascertain what proportion of the operations according to each have been successful when compared with the whole number performed. In this way only can their respective merits be properly set forth. To effect this object, I have examined, so far as my opportunities allowed, the records both of Europe and this country; but as the data are imperfect, I have not been able to arrive at very satisfactory conclusions.

Chelius speaks of Wutzer as having had the greatest success. Of eighteen cases operated upon, three were radically cured. We are not informed how many operations were performed in all.

Jobert, by the anaplastic process, cures, I am induced to believe, about one-half of his cases. What proportion of his operations fails, I have not been able to learn.

Mr. Henry Earle is said to have operated thirty times upon one case before succeeding. The failures here were as twenty-nine to one.

Mr. Brown operated ten times upon three cases, and obtained one successful result. The failures here were as nine to one.

Dr. Hayward operated twenty times upon nine cases, and obtained three successful results. The failures here were as seventeen to three.

"I am not prepared to state positively what proportion of the whole number of operations performed according to the method of Dr. Sims has been successful. Judging from my own experience, and from what I have seen of it in the practice of others, I am inclined to think that the average is not over one-half.

"In regard to my own cases, it may be supposed by some that they were all peculiarly favorable, which accounts for my unprecedented success; but this was not the case: a reference to their individual histories will show that they were quite the reverse. The very fact of two of them having resisted the repeated application of the clamp suture, is

proof sufficient upon this point. The other two were each double fistulae, and therefore very unfavorable. One of them, case 11, I consider the most unpromising I have ever seen, that was at all curable.

"In conclusion, I freely acknowledge that the results thus far obtained, by the use of the button suture, although so remarkably successful, do not amount to a sufficient number to justify an indisputable claim to superiority over all other procedures: and I do not, therefore, urge its adoption, by the profession, without farther trial. This is all I ask for it at present. My little experience with it has led me to believe that the principles upon which it acts are more nearly correct than any heretofore suggested; but if, upon more careful examination, this be found not true, it will only prove that the success of my seven operations was a most remarkable and heretofore unheard of coincidence.—Jan. 1st, 1856.

"A few weeks since, there appeared in the New York Medical Gazette, a notice of the number of the Review containing the above article, in which the writer says that I am mistaken in regard to Dr. Sims' success, and asserts that he (Dr. Sims) has cured, during his residence in New York, thirty cases without a failure.

"From this, it would seem that I had done Dr. Sims great injustice. While I here disclaim any such intention, I will simply add, that my language in reference to his and other operations as compared with mine, is explicit, and I am surprised it should have been construed into a meaning so unjust.

"That Dr. Sims has done what is claimed for him, I have not the slightest doubt, but this fact has no bearing upon the statement made by me. The point which I endeavored to arrive at, was, what proportion of the operations performed according to different methods, had been successful. The opinion expressed as to the *clamp suture*, was principally based upon my own experience with it. This amounted to eight operations, six of which having been complete failures. If I am in error as to the average success of other operators, it remains to be determined by statistical facts, which are not before me, and so far as my knowledge extends, have never been published.

"As additional support to the advantages claimed for the button suture in my paper, I will state that since it was prepared for the press, I have performed eight more operations, making in all fifteen. My twelfth operation was a partial failure. All of the others were entirely successful.—July, 1856."

How much so ever future experience may prove the superiority of the button suture, of Dr. Bozeman, as compared to the clamp suture, of Dr. Sims, the claim of the latter to priority in regard to the fundamental principles of the operation, so successfully practised by both, cannot in anywise be invalidated. Dr. Bozeman freely admits that his suture is but a modification of Dr. Sims'. It is advisable to study the method of the latter, before that of the former—the clamp suture first, the button next. The first term, which is a stumbling block to the French translator, is not very comprehensible to English reader without

illustrative diagrams ; the second is in the same category, though, perhaps, even to the French less ambiguous, if, indeed it should be analogous to "the buttoning of one's vest."

If eventually the profession shall find the *clamp suture*, with its *button* modification to be no more eligible than the sutures heretofore in use, it will follow that Drs. Sims and Bozeman without any extraneous aid from superior apparatus, have by their superior skill, attained unparalleled success,—which latter supposition is not improbable, since J. P. Mettauer, M. D., LL. D., of Virginia, preceded them by many years, and operated with great, perhaps with equal success, by the simple interrupted leaden suture, though the exact ratio of his cures to his cases is not recollected. Such men should be honored as public benefactors.

*Io triumphe!* This pæan to modern surgery would be, nevertheless, somewhat subdued, if all unsuccessful cases were reported. It must be self-evident to the pathological anatomist that a class of cases affected with fistulæ, having lost large portions of the bladder, urethra, rectum, and adjacent organs, cannot be cured by any method yet devised.

Statistics may be strictly true yet virtually false for the purposes of numerical medicine—a paradox not difficult to explain. Thus, a surgeon who selects only favorable cases in which an operation can scarcely fail of success, rejecting desperate or unpromising ones in which the greatest skill is likely to fail, may obtain a high ratio of cures, which, though true, does not represent the risk, failure, or mortality incidental to the numerical history of a malady as a whole, in which the principle of selection is disallowed. How able soever a surgeon may be, he very naturally prefers hopeful cases although from a consciousness of duty he takes upon himself the responsibility of operating on others of a different character, though his reputation may suffer thereby, should the operation prove unsuccessful. Thus in cases where there is no alternative but death or a dangerous operation, he is justified in operating, though but one out of many be saved. A good conscience compensates for statistics seemingly bad.—EDITOR.



REV. III.—*History of Medicine from its origin to the 19th century, with an appendix containing a philosophical and historical review of Medicine to the present time* : By P. V. RENOUARD, M.D., Translated from the French by CORNELIUS G. COMEGYS, M.D., Professor of the Institutes of Medicine, Miäma Med. Coll. Pp. 719. 8vo. Cincinnati: Moore, Wiltach, Keys & Co. 1856.

DR. RENOUARD'S "History of Medicine" though divided into historical periods, books, chapters, and sections *ad infinitum*, has more unity in appearance than in reality. Its inconsecutiveness, anachronisms, and fusion of ancient and modern ideas; its deficiency of dates; its slight developmental connections; its scanty narrative; its poverty of biography—render his work somewhat erratic in its march "down the corridors of time." But in a scientific work the striking incidents, the grand transactions and dramatic events which constitute history proper, and upon which the pure historian delights to dwell, would be out of place. These relations of the superficial forms of the movements and material interests of humanity, easily comprehended by the sciolist, are popular, because they find their echo in the grosser passions which sway the world at all times and in all places. It is far different with respect to the internal history of the human mind in relation to thought, intellectual development, abstract investigations, the application of the synthetic and analytic methods to phenomena, with the view of discovering and generalizing the laws of science. In order to keep pace with the profound metaphysical and severe critical appreciation of Dr. Renouard, the reader must work mentally,—which the many will recoil from still more than from corporeal labor.

The reader in order to comprehend these topics must as already stated, pause at every step, to compare, reason and judge, in all of which, he will be greatly facilitated by an author who proceeds by a clear and methodical development of ideas, particularly when they relate to the mental progress, by which sound theories, and systems are eliminated from the phenomenal world.

Dr. Renouard narrates intellectual events—if the expression be allowable. He takes his first departure from the primitive or patriarchal and priestly age—consults "the Medicine-men" of ancient Egypt, Palestine, India, China, Greece, Arabia, and Rome. He next passes to the transition age, commencing with the third century of the Christian era, and advances to the fourteenth century, the age of medical renovation, and organization and proceeds downward upon the world. He concludes

with the age of medical reform proper comprising the seventeenth and eighteenth centuries.

Having reached the 19th century, he pauses to build a large Appendix, in which he voyages down still further, being at length fully freighted with intellectual wealth, whereupon he casts anchor into the middle of the current century, in the latitude of Paris.

While Dr. Renouard in his explorations into the ancient world, bows with reverence before the ever honored name of Hippocrates, giving a full and lucid exposition of his doctrines, (pp. 91 to 145, and elsewhere) he has, nevertheless the moral courage to criticise with due severity many absurdities and contradictions which disfigure the true or apocryphal writings of the great founder of experimental philosophy—a method which Hippocrates first applied to medicine, thereby inaugurating the inductive logic, pointing out the way to Bacon, Newton, and the experimental school of modern science.

By way of contrast, it may not be amiss to give a few *dicta* from the Epitome of the writings of “the illustrious Hippocrates,” translated a few years ago by an orthodox adherent of the sage of Cos, that is, the learned Dr. John Redman Coxe, of Philadelphia—*dicta* ignored by Dr. Renouard. If Homer sometimes nodded, so did the Father of Medicine. Hippocrates speaketh on this wise: “Ardent fever is cured by ischiatic pains, or by distortion of the eyes and blindness, or swelling of the testicles or breasts, and at times by epistaxis.” “Fever will not attack with violence a weakened part.” “In fever, if spasm occurs, the fever is arrested within three days. In spasm or tetanus, a fever coming on removes it.” 115, 116.

“Sciatica commonly arises from a long exposure to the sun, by which the hip-joint becomes heated, and its humors are dried up.” 120.

The cure of pleurisy is as follows: “Do not endeavor to check the fever before the seventh day.” 240. “Fevers most commonly proceed from bile.” 157.

“For the same things that cause, also cure the complaint—*alio modo per similia morbus oritur et per similia oblata ex morbus sanantur!* 226-7. [Homœopathy! O Hippocrates!]

“Venery is a cure for a long dysentery.” 449. “Bald fathers usually propagate bald children, the lame beget lame children.” 190. (*On airs, waters, and localities*).

“The Scythians have customs and a character peculiar to themselves, by which they are distinguished from all other people, in the same way as the Egyptians. Their women are not fruitful; their wild animals are small and few in number. Southern gales are raw and faint, but those

from the north are violent, with snow, ice, and rain. The plains are elevated and barren." "It is hence impossible that either mind or body should be vigorous, and consequently the inhabitants of those countries are thick and heavy, their limbs flabby and relaxed, their belly loose; how indeed could it be otherwise in such a country and with such seasons?" 193. The recent campaigns in the peninsula of the Crimea\* afford the best exposition of these Hippocratic dicta.

In the leading article in *The Glasgow Med. Journal*, for July, '56, (*General Report on the Pathology of the Army in the East*), by R. D. Lyons, M. B. T. C. D., Principal Pathologist to the Army, addressed to Lord Panmure, the *physique* of the Russians is described as follows, by Dr. Lyons: "In a very considerable proportion of the Russian prisoners who came under my observation, the physical development of the frame seemed to be that best suited for the safe endurance of the hardships and fatigues of warfare. The muscular system was well developed, vigorous and firm, with the adipose tissues a minimum. Their frames were in fact 'hard, firm', and in thorough working order, and in this respect, contrasted forcibly with the 'soft' inflated, though apparently stalwart systems of some of her Majesty's troops."

To Professor Comegys much credit is due for his honorable and useful labor in rendering Dr. Renouard's work into the English language. Prof. Comegys in his preface candidly alludes to the many errors which abound in this work, adding, that "few of them however, impair" [misrepresent] "in any great degree the original, and do not therefore, materially pervert the author's meaning." These errors can be corrected in a second edition. In the meantime, Professor Comegys should revise his English, and several of the technical terms used, be his original text what it may: For example: "It will suffice to name Bacon, Locke, Hume, and Condillac, for the *sensualist* school"—164—*et passim*,—instead of *sensuous* school. "School of sensualists," 156; modern *sensualists*" 217, *et passim*; instead of *sensationalists*.—"In sum the winter seemed." 113, &c.

To a physician of an inquiring mind at all desirous of looking beyond the narrow limits of mere hand-books and of existing routinism—to one desirous of knowing the history of the medical mind—its progress and results—one who wishes to trace the stream of science, now choked up with error, then breaking over all obstruction, now deepening and widening by new tributaries, growing clearer, stronger, and finally resistless—to such a physician who is grateful to his predecessors for the inestima-

\*—The Volga or Rta divided Samartia on the west from Scythia on the east, though for the most part it appears that the Scythians were regarded vaguely as the inhabitants of the North, chiefly in what now constitutes Russian Asia.



ble benefits which have been transmitted to him, Dr. Renouard must be a most welcome, indeed an essential guide in voyaging upon the past.

To the American student of Medicine, Dr. Renouard's work will supply a *desideratum* long felt, now realized, and, hitherto inaccessible in the English language in this country.—EDITOR.

REV. IV.—*Report of the Joint Special Committee on the Census of Boston, May, 1855, including the Report of the Censers, with Analytical and Sanitary observations:* By JOSIAH CURTIS, M. D. Boston, 1856. Pp. 104. 8vo.

THE Special Joint Committee of the City Council of Boston to whom was assigned the duty of taking the Census of that city, say in their report to the authorities, "your committee have availed themselves of the services of our fellow citizen, Josiah Curtis, M. D., who has analyzed the subject and prepared the accompanying Article. The ability and familiarity of this gentleman with this class of investigations, and his general reputation as a writer on these subjects, renders the Article worthy of particular attention."

The committee's Report occupies a dozen of pages—Dr. Curtis' philosophy nearly 100.

A synopsis of a portion of Dr. Curtis' researches will doubtless interest the readers of this Journal, while, at the same time, it ought to awaken an honorable spirit of emulation in the Southern cities, where, as yet, little or nothing has been done in a satisfactory manner, illustrative of the vital and sanitary statistics of the population as influenced by hygienic measures. Let Louisiana follow the example of Massachusetts—New Orleans that of Boston; conjectures will then give place to arithmetic—theories, to registrations of marriages, births, diseases, deaths, and reliable enumerations of the different classes of the population in reference to locality, drainage, water, ventilation, baths, lodging, &c.

Although Dr. Curtis has written forcibly upon most of these topics, yet he has added nothing new: hence it is proposed to reproduce his statistics, rather than his sanitary speculations.

"The population of the City of Boston increased 24,422 during the five years intervening 1845 and 1850, while the increase from the latter date to 1855, was little less, being 22,641. The most remarkable feature connected with this augment, pertains to that portion of it relating to the *foreign population*. Of the 114,366 that comprised the whole population in 1845, the American portion embraced no less than 77,077, or 67.40 per cent., while the foreign portion was only 37,289 or 32.60.

per cent. In 1850, the population was 138,788. Of these the American portion comprised only 75,322, or 54.27 per cent. *having decreased* 1,755, which was a *loss* of 2.27 per cent. on the American portion of the population of 1845. But during the same five years, viz., from 1845 to 1850, the foreign population in Boston, had increased no less than 26,177, or 70.20 per cent. on the number of foreigners in 1845. Of the population in 1855, (161,429) the Americans constitute 75,922, or 47.02 per cent., and those of foreign origin, 85,507, or 52.98 per cent. Instead of decreasing, as was the case during the former five years, they have increased 600 or .08 per cent., while those of foreign origin have increased in the same time, 22,041, being only 34.73 per cent., against 70.20 per cent., during the preceding five years. Although the rate of increase in the foreign population was not quite one-half as great since 1850 as it was during the five years immediately preceding, yet it has been sufficient, as was anticipated, to change the majority of the whole population of our City from the American to the foreign side. On the first of May, 1855, we find that there were 9,585 more of foreign birth, (including their children,) than there were of native citizens. It will be very difficult to name a day in the future, when the number of American citizens, in the distinctive sense that this term is commonly used, will again constitute a majority of those who shall inhabit the present limits of Boston.

"It is also here worthy of remark, that while native voters have increased only 30.38 per cent. since 1850, the foreign voters have increased three-fold, or no less than 194.64 per cent.

"In the City of Boston, the births from foreign parentage during the past five years, have been more than twice the number of those from parents who were born in this country. The foreign fathers were 17,749, and the foreign mothers were 17,702, being a mean of 17,725½, while the American fathers were only 8,654, and the American mothers 8,819, furnishing a mean of 8,236½.

This disparity of foreign and American parentage among the births has been increasing for quite a number of years past."

*Marriages.*—"In our City and State, a very much larger proportion of females especially, marry at an early age, than is the case in European countries. Thus, in England, during the ten years, 1840-50, only about four and a half per cent. of the males, and fourteen and a half per cent. of the females marry *under 21 years of age*. Nearly 19 per cent. of the females married in Boston during the last five years, were *under 20 years of age* at the time of entering wedlock, as shown in the following calculation, which exhibits the number and per cent. of each sex, marrying at different ages, between 1850 and 1855." \* \* \*

*Births and Deaths.*—In 5 years ending with 1854, the total births amounted to 27,209—the deaths to 19,983.

"With the exception of a single year, there has been a constant diminution in the excess of births over deaths from year to year, since 1850, which is quite a significant fact in a community like ours. The difference in the sexes during the five years among the births, were 539, in favor of the males, and among the deaths in the same time, it was 521,

also on the side of the males, giving an increase by propagation alone, of less than one in a thousand, or one-tenth of one per cent. during the five years, in the ratio which the males bore to the population of 1850. This, it must be borne in mind, pertains to the whole number of male deaths. Should we consider in the calculation only the deaths that have occurred to persons under five or ten years of age, we should find that a different result would obtain, for it is emphatically true, that although more males are born than females, more males also die at an early age than females, so that the preponderance of males caused by their excess in births, is more than lost before the end of the first year.

This fact is equally clear, whether we consider only Boston or the whole State. The annual excess of births over deaths in the whole State, is something more than 10,000; but it is much greater in the five western counties, than it is in nine eastern counties.

"The whole mortality in Boston since 1850, to the end of 1854, (five years,) is shown to have been 19,983, or an annual average of 3,777. The mean number of the population in the same length of time, but beginning and ending five months later, was 150,108, which shows an annual average of one death to 40, of the population, nearly; or more accurately, 2.516 per cent., which is an improvement on the average of the preceding five years. In 1847 and 1849, when the Dysentery and Cholera prevailed as epidemics, the rate of mortality was over 3 per cent., and in no year since 1845, has it fell as low as we have demonstrated it to have been for the period since 1850.

*Comparative Mortality of Natives and Foreigners*—"The aggregate number of deaths classed as among citizens of American origin, during the five years, was 8,359, while the aggregate number from those of foreign origin, was 11,508, there being 116 placed as of unknown origin. This gives an annual average of 1,672 American, and 2,302 foreign, which shows the average mortality since 1850, to have been to the average population of each class, as follows: American, 2.211 per cent.; Foreign, 3.09 per cent., or in other words, in every 10,000 Americans in Boston, 221 have died annually since 1840, and of every 10,000 of foreign origin in Boston, 309 have died annually since 1850, which is very nearly in the proportion of 10 to 14, as the ratio between the actual mortality of the two classes of our citizens.

"The mortuary records as published in the City Registrar's Reports, do not designate the number of deaths among the Irish, except in the year 1854, which was then 2,461. Now, by the Census of June, 1855, that class of our citizens numbered 68,611, which gives the rate of mortality among them as 3.59 per cent., or 359 in every 10,000 of that population. Two points must here be kept in mind; first, that this is more favorable than the real truth, from the fact that it is the rate of mortality among the Irish in 1854, to that population in 1855. Second, that the number of deaths as well as the population, embrace the children born in Boston."

*Infantile Mortality*.—"It will be observed that 12.82 per cent. of males, and 10.79 per cent. of females, making no less than 23.61 per cent., or nearly *one-fourth* of all the deaths are among children under one



year of age. This is a striking fact, and need not exist. The causes of its existence are manifest to every one versed in sanitary science, and are removable. The truth of the above remark is as susceptible of demonstration, as it is difficult to suppose that one quarter of all the mortality of any community in a series of years, is, of necessity, to be sustained by that portion of the population who have not seen a single year of human existence.

"Now if we add the 1,177 cases of still born children since 1850, to the number of deaths under one year of age, we shall find that in each year separately, and in the aggregate of the five years, between one-fifth and one-fourth (accurately 20.77 per cent.) of all who have been born in Boston during the time, have not lived so long as twelve months."

The total mortality in Boston for 5 years ending with 1854, for each month is as follows: Jan., 1,662; Feb., 1,530; March, 1,681; April, 1,613; May, 1,524; June, 1,425; July, 1,835; Aug., 2,289; Sept., 1,905; Oct., 1,446; Nov., 1,485; Dec., 1,588: Grand total in 5 years, 19,983. Some of the principal diseases which contributed to the mortality give the following mortuary figures: Dysentery, 659; Typhus, 603; Measles, 529; Erysipelas, 186; Scarlatina, 682; Croup, 612; Cholera Infantum, 397; Infantile(!) 1,402; Teething, 788; Consumption, 3,421; Pneumonia, 1,108.

The total number of births during the five years mentioned, was 27,209, affording 7,226 more births than deaths.

*Dysentery*.—In 5 years ending with 1854, dysentery carried off 659 persons, more than half in August and September; July, 76—August, 196—September, 177;—October, 79;—528 for the quarter, leaving but 131 deaths from this cause to be distributed over the remaining three quarters of the year.

*Typhus Fever*.—This malady in 5 years proved fatal to 603. Although this disease prevailed most in the cold season, yet it is distributed with comparatively little variation through all months of the year.

*Measles*.—From this cause 529 died. The fatality was greatest in the cold season.

*Scarlatina*.—682 deaths—most fatal in winter; 93 in Jan.; 19 in Sept.; *Croup*, total 612; most fatal in the same season; *Cholera Infantum*, 397—all in July, Aug., Sept., and Oct., with the exception of 13; *Infantile*, 1,462, the smallest number 88, in June—the largest 189 in Aug.; *Teething*, 738—the largest number, 142, in Aug.; the smallest, 37 in Jan.

Deaths from *Consumption*; 3,421—distributed with little variation among all months; *Pneumonia*, total 1,108, chiefly in the cold season.

During 5 years 1850–1854 inclusive, there died in Massachusetts, of *Consumption* 20,868; of *Pneumonia* 4,298—of both maladies 25,166.

Dr. Curtis' account of bathing, washing, and housing for the poor is suggestive and deserving of attention in the hot climate of New Orleans.

"The only Public Bathing and Washing Establishment in this country that we are aware of, was erected in the City of New York, at an expense of \$42,000, and commenced operations June 1, 1852. By the third Annual Report, we learn that, during the year ending June 5, 1855, there were 69,325 bathers, and 7,867 washers, who availed themselves of its privileges; the price of a single bath being 3, 6, 10 and 12 cents, according to kind, and the charge to washerwomen was equally moderate.

"Without discussing the obvious importance to health and the general welfare, of cleanliness of person and clothing, we have expressed the above facts to show with what consideration the means for promoting the public good of the poorer classes of population, and with what readiness to adopt such measures, the authorities and the more favored of other communities are disposed to act.

"There is another method also, somewhat allied to the foregoing, by which the public can engage largely either with or without the co-operation of legislative bodies. We refer to the subject of Model Lodging Houses, or the construction of a better class of dwellings for the laboring population. These, like the Public Bathing and Wash Houses, are not strictly charitable establishments in the abstract application of the term. They are, therefore, the more commendable, as they furnish a much surer means for the indigent to have a care for themselves. Almsgiving is not generally the best mode of benefiting those who are made the objects of charity. There is a higher and more efficient benevolence in doing that which will encourage the needy to do something, and be something by their own well applied exertions, than by extending them the means of living in idleness. Give encouragement and direction to abilities already possessed in most cases, and you beget a laudable ambition, a self-respect and self-reliance, that will accomplish far more than by naked almsgiving, towards elevating that principle which will not readily submit to a life in the workhouse, or accept of the too often mistaken private benevolence, which, though it may be thought to 'bless' the giver, seldom benefits, but more frequently degrades the recipient.

"The great subject of Model Lodgings, has acquired new interest among us, and received an effective impetus by the munificence of our late distinguished fellow-citizen, the Hon. Abbott Lawrence, who, in his testament left \$50,000 to be appropriated for the establishment of Model Dwellings in our City."

Dr. Curtis reproduces a number of statistical details and results, recently obtained in England illustrative of the superior sanitary advantages of Model Dwellings for the industrial classes. These buildings erected by associations chartered for this purpose, combine comfort and ventilation, together with a moderate rental, which, however, it is believed, remunerates the proprietors.

Of certain insalubrious districts of Boston, (wards 7 & 8) Dr. Curtis paints the following dismal picture, the parallel of which, it is believed, cannot be found in the most wretched slave quarter in the South—approximations however may be seen in cities in the South among the poor whites, chiefly immigrants :

“No one will be surprised at these facts, who will take the trouble to visit the abodes, many of them cellars, and nearly all crowded with a dying mass of human beings, which occupy the low land, much of it redeemed from the water, that lies in the northerly, easterly and southerly sections, and suburbs of Boston. They are equal to anything we have ever been able to discover in European cities. Probably not one in a thousand of our more favored citizens have any correct idea of the low, dark, damp habitations grouped in badly drained and almost unscavenged neighborhoods where thousands, and we think we might safely say tens of thousands of our population dwell, amidst all the impurities of a polluted atmosphere, and personal uncleanness. These are the hot-beds of typhus, dysentery and other epidemics, as well as diseases peculiar to children. The various exhalations of the human body, particularly when regardless of cleanliness, in an over crowded apartment, is ranked among the most deadly poisons known. It acts insidiously but with fatal certainty. This condition, especially when connected with a scanty supply of nourishing food, begets struma which ripens the system for an attack of any of the more severe epidemics in the adult, and cholera infantum, marasmus and convulsions in children.

The christian heart becomes faint at the thought made forcible by the actual knowledge that vast numbers of our fellow citizens, every way capable of becoming useful and respectable members of society, are doomed to exist, until a speedy or lingering death terminates their brief career.” 69.

Legislators of Louisiana ! Legislators of New Orleans ! Read the Honorable Amasa Walker the Secretary of State’s Statistical Report (reviewed by the present Editor of this Journal, Vol. VIII, 510,)—read Dr. Shattuck’s and Dr. Curtis’ works on the Statistics of Boston—compare States and Capitals, and you will see the difference ! Can any one give from reliable data, a classified bill of even the mortality for any parish or city in the State ?—EDITOR.

## MISCELLANEA.

ART. I.—*On the Geographical Distribution of Health and Disease, in connection chiefly with Natural Phenomena* ; by ALEX. KEITH JOHNSTON, F. R. S. E.

It appears that an abstract of Mr. Johnston’s work above named, was recently read in the Epidemiological Society of London, by Dr. M’William—a sketch of which from the *Lancet*, (Aug., 1856; Stringer & Townsend’s reprint) is subjoined.



The subjects of this important communication were illustrated by a large and beautifully-colored map, upon which were delineated the various groups of diseases prevailing in the different portions of the globe, the region of each group being marked by its particular colouring. The map also exhibited equal annual, summer and winter, isothermal lines; lines pointing out the march of cholera from east to west; lines indicating the foreign stations of the British navy; the zones of diet; diagrams showing the proportion of deaths from consumption in different quarters of the globe; the attacks of rheumatism amongst the troops on different stations; and the comparative value of human life in different countries and in cities and town. The map, and the paper in a more extended form, will appear in a forthcoming edition of Mr. Keith Johnston's "Physical Atlas."

The author commences by observing that in the investigation of the extent to which the human family is affected in the enjoyment of health, and the preservation of life, by physical and natural causes, statistics form the safest guides in the accumulated stores of carefully-observed and accurately-recorded facts, regarding the occurrence of disease in its different forms, its extension or limitation in space, and the periodicity of its recurrence. But reliable tables of sickness and mortality do not exist, except for very limited and widely-separated portions of the globe. In the absence of positive data, however, a knowledge of the physical conformation of the earth's surface, and the meteorological agencies to which it is exposed, affords, through comparison of well-known phenomena in long-settled countries, a means of arriving at certain probable conclusions regarding others of which little or nothing is known. After briefly noticing the object of medical geography, the author shows that similarity of geological formation indicates a similarity in the diseases of a country, and that a certain amount of heat, and a sufficient time for its manifestation, is necessary for the development of certain maladies. In the West Indies, for instance, the period of disease follows the course of the sun, the unhealthy seasons occurring at opposite times on the northern and southern sides of the equator. As the sun proceeds northwards in the ecliptic, so the sickly season advances from the southern to the northern islands. In the mediterranean the mortality is doubled in the hot season, between July and October; and in the southern States of North America the posts of the army are regularly abandoned as the hot or sickly season approaches. But in the temperate regions the order is reversed. Throughout Europe generally the maximum mortality occurs at the end of winter, and the minimum in the middle of summer. After dwelling for some time on the influence of winds, elevation above the sea level, temperature, moisture, and electricity, upon health, the author proceeds to illustrate the great object of his paper by the aid of a map, upon an extended scale, upon which the distribution of disease over the various regions of the globe is clearly and intelligibly laid down. With a view to demonstrate that regions of disease correspond with seasons and zones of climate, Mr. Keith Johnston divides the surface of the globe into belts or zones, distinguished by great leading characteristics, as—1st. The torrid zone, or belt of greatest annual mean temperature, characterized by the class of diseases

which includes *dysentery, yellow fever, diarrhœa, malarial fevers, and diseases of the liver*. This class of disorders depends essentially on heat and moisture as exciting causes, and therefore prevails in great intensity in the countries situated under the line of the greatest annual mean temperature. Its northern limit is probably the Bermudas, lat.  $32^{\circ}$  N. in the Atlantic, and California,  $38^{\circ}$  in the Pacific Ocean, in America. In Asia, it extends to near Pekin, lat.  $40^{\circ}$  N.; and in Europe, to the South of Spain. Its southern limits are: in America—Buenos Ayres, lat.  $34^{\circ}$  S. in the Atlantic, and Lima, lat.  $12^{\circ}$  S, in the Pacific; in Asia, the southern limits include Aracan, Ava, Ceylon, Borneo, and the other islands of the Asiatic Archipelago, and then to the northern shores of Australia; in Africa, it includes the Island of Madagascar. Within these limits, the principal centres of these diseases are: in America—the shores of the Gulf of Mexico, the West India Islands, and the northern portion of South America; in Asia—India, China, and Ceylon, in Africa—the countries around the Gulf of Guinea on the west, Madagascar and Mozambique in the east, Algeria, and the shores and islands of the Mediterranean on the north. In the second or sub-torrid and temperate zone, inflammatory diseases represented by typhoid fevers are the characteristic maladies. In North America and Europe, the southern boundary of this group of diseases coincides generally with the northern boundary of the first class; in South America, it probably includes Patagonia; in Africa, it includes the Cape Colony; and it embraces the South of Australia, Tasmania, and New Zealand. Its northern limit, America, includes Nova Scotia and Newfoundland; and in Europe, the northern boundary includes the British Islands, Norway, and Sweden, to  $60^{\circ}$  N.; whence it follows a south-eastern direction, till it gradually declines towards the borders of Asiatic Russia. The third zone, or the sub-temperate, sub-Arctic and Arctic zones, characterised by catarrhs and colds—includes the whole of Europe to the north of the preceding class. In America it extends south to Boston and New York, including the district of the Canadian Lakes; thence it continues northward, nearly on the line of  $41^{\circ}$  mean and annual temperature. Iceland is the best known locality of this zone, and may therefore be taken as its representative. This island is attacked by catarrh every year in spring, or early in summer. Influenza, which occasionally visits this island, has also a great influence on the mortality, attacking the whole of the inhabitants, and spreading, in an incredibly short space of time, over the whole island. Pallas says that the majority of Icelanders die, before the age of fifty, from asthmatic and catarrhal affections; and Crantz, that catarrh is very prevalent in Greenland. At Okhotsk, in Siberia, it is accompanied with difficulty of breathing; and a cough called “Ho” is endemic among the Samoieds. Mr. Johnston then enters, in a comprehensive manner, upon the subject of climatology, and diseases of different quarters of the globe, examining, with great skill, the maladies that infest the shores, the valleys, the mountainous districts and the islands of each of its great divisions; he next gives a rapid but vivid sketch of the main epidemics by which mankind has, from time to time, been afflicted, tracing them from the regions of their birth to other countries into which they sometimes make inroads, and showing the modifications which they sometimes undergo in their progress.

ART. II—*Prejudice against Dissections.*—"The law in its present state" says the author of London, (1844, p. 59) "neither tolerates the practices of resurrectionists nor anatomists."

"In the court of King's Bench, in 1832, it was decided to be a misdemeanor to carry away a dead body from a churchyard, although for the purpose of dissection, as an offence against common decency. A surgeon the master of a work house, and another person, were indicted for and convicted of a conspiracy to prevent the burial of a person who died in the work house. In another case, the defendant was found guilty of a misdemeanor for not having buried the body of an executed felon, entrusted to him by the jailor for that purpose. Lastly, in another case a short time since, certain physicians were convicted, and received sentence, for having taken into their possession, with intent to dissect a dead body, at the time knowing it to have been disinterred.

"The law interdicts exhumation, yet it requires a proficiency in the medical practitioner that cannot without it be obtained. A surgeon performing an operation unskillfully is liable to punishment, &c."

The high price (10 guineas) paid for dead bodies in London, induced persons to commit murders for the purpose of selling *subjects* to the Medical Faculty.

What a contrast does New Orleans offer to medical Students!

*"O fortunatos nimium, sua si bona nôrint!"*

The ancients (as well as the church until a few centuries ago) regarded the dissection of human bodies with great disfavor. Hallam (*Hist. Lit. in Europe*. I. 364-5, Paris Edit. 1839,) thus notices the case of Vesalius in later times:

"Every anatomist was left far behind when Vesalius, a native of Brussels, in 1540 became professor of the science at Pavia, published at Basle, in 1543, his great work *de Corporis humani Fabrica*. If Vesalius was not quite to anatomy what Copernicus was to astronomy, he has yet been said, a little hyperbolically, to have discovered a new world. A superstitious prejudice against human dissection had restrained the ancient anatomists in general to pigs and apes. Vesalius and his students prowled by night in charnel houses, they dug up the dead, they climbed the gibbet, in fear and silence to steal the mouldering carcass of the murderer! the risks of ignominious punishment, and the secret stings of superstitious remorse, exalting no doubt the delight of these useful, but not very enviable pursuits.

"Vesalius, after living for some years in the court of Charles and Philip, as their physician, met with a strange reverse, characteristic enough of such a place. Being absurdly accused of having dissected



a Spanish gentleman before he was dead, Vesalius only escaped capital punishment, at the instance of the Inquisition, by undertaking a pilgrimage to Jerusalem, during which he was shipwrecked, and died of famine in one of the Greek Islands."

ART. III.—*The Cadaver and the Cemetery.—Laying out.*—"Few scenes are fraught with more solemnity and awe, none more chilling to the heart, than the chamber of the recent dead. It is like the cold porch of eternity! The sepulchral silence, the dim light, the fearful order and repose of all around—a sick room as it were, suddenly changed into a charnel house—the central object in the gloomy picture, the bed—the yellow effigy of him *that was*, looking coldly out from the white unruffled sheets—the lips that must speak no more—the eyes that are shut forever."—*Diary of a Physician.*

*Cemeteries.*—Miss Harriet Martineau, in her Retrospect of Western travels, thus speaks of Cemeteries: "I believe it is generally allowed that Mount Auburn (Boston) is the most beautiful cemetery in the world. Before visiting it I had seen the Catholic cemetery at New Orleans, and the contrast was remarkable enough. I never saw a city church-yard, however damp and neglected, so dreary as the New Orleans cemetery.

"It lies in the swamp, glaring with its plastered monuments in the sun, with no shade but from the tombs. Being necessarily drained, it is intersected by ditches of weedy stagnant water alive with frogs, dragon-flies and mosquito-hawks; Irish, French, and Spanish, all crowded together, as if the ground could scarcely be opened fast enough for those whom the fever lays low; an impression confirmed by a glance at the dates. The tombs of the Irish have inscriptions which provoke a kind of smile, which is no pleasure in such a place. Those of nuns bear no inscriptions but the monastic name—Agathe, Seraphine, Thérèse—and the date of death.

"In Père la Chaise every expression of mourning is to be found; few or none of hope. The desolate mother, the bereaved brother, the forlorn child, the despairing husband, all breathe their complaint, with more or less of selfishness or tenderness, but there is no light from the future shining over the place. In Mount Auburn on the contrary there is nothing else. A visiter from a strange planet, ignorant of mortality would take this place to be the sanctum of creation. Every step teems with promise of life. All the woes of bereavement are veiled; all sighs hushed; all tears hidden or wiped away, and thanksgiving and joy abound in stead."—II. 170-1-2.

*The American in Paris*, (II. 59.) thus speaks: "Here [in the cemetery of *Père la Chaise*] is a most beautiful tomb of a lady surmounted by an image of *silence*, her finger on her lip. Does it intimate the lady could not keep a secret? Oh no! It admonishes other ladies to hold their tongues. This one is *all French*; (in English—) "Here reposes Georgiana, daughter of *Miss Mars*. Reserve your tears for her *mother*."

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ART. IV.—*Populousness of Ancient Nations*.—Hume the historian, in a very elaborate essay based on very numerous original authorities which he has collated, undertakes to show by direct, incidental, and collateral evidence, that the ancient nations mentioned in history were less populous than many moderns have supposed, though one of his principal arguments in this behalf does not appear very conclusive, namely, the unfavorable influence of slavery as a retarding cause of populousness. He says: "The custom of exposing old, useless, or sick slaves in an island of the Tyber, there to starve, seems to have been pretty common at Rome. The *ergastula*, or dungeons, where slaves in chains were forced to work, were very common all over Italy. Columella advises that they be always built underground. A chained slave for a porter was usual in Rome. If domestic slavery really increased populousness, it would be an exception to the general rule that, the happiness of any society and its populousness are necessary attendants." The author argues that as it was cheaper to buy than to rear slaves, "those who had slaves would discourage pregnancy and either prevent or destroy the birth. The human species would perish in those places where it ought to increase the fastest; and a perpetual recruit be wanted. Such a continual drain would tend mightily to depopulate the state."

"All ancient authors tell us, that there was a perpetual flux of slaves to Italy, from the remoter provinces, particularly Syria, Cilicia, Cappadocia, and the Lesser Asia, Thrace and Egypt. Yet the number of people did not increase in Italy; and writers complain of the continual decay of industry and agriculture. Where then is that extreme fertility of Roman slaves, which is commonly supposed? So far from multiplying they could not, it seems, so much as keep up the stock without immense recruits. And though great numbers were manumitted and converted into Roman citizens, the numbers even of these did not increase, &c."\*

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\*—"It is computed in the West Indies, that a stock of slaves grow worse *five per cent.* every year, unless new slaves be brought to recruit them." This was written in 1752—more than a century ago.

"Some great men possessed to the number of 10,000 slaves—a Roman nobleman had 400 under the same roof with him." 386.

The historian considers the frequency, duration, and bloody character, of ancient wars, as tending to sustain his argument. With regard to diseases, he remarks: "Diseases are mentioned in antiquity, which are almost unknown to modern medicine; and new diseases have arisen and propagated themselves, of which there are no traces in ancient history. In this particular we may observe, upon comparison, that the disadvantage is much on the side of the moderns. Not to mention some others of less moment, the small-pox commits such ravages, as would alone account for the great superiority ascribed to ancient times. The tenth or the twelfth part of mankind destroyed every generation, should make a vast difference; and when joined to venereal distempers, a new plague diffused everywhere, this disease is perhaps equivalent to the three great scourges of mankind, war, pestilence, and famine.

" \* \* \* There were exact bills of mortality kept at Rome, but no ancient author has given us the number of burials, except Seutonius who tells us, that in one season there were 30,000 names carried to the temple of Libitina,\* during a plague." 18—26—vol.3

" \* \* \* We know not exactly the numbers of any European Kingdom, or even city at present [1752].

"In general, warm climates, as the necessities of the inhabitants are there fewer, and vegetation more powerful, are likely to be more populous: But if everything else be equal, it seems natural to expect that, wherever there are most happiness and virtue, and the wisest institutions, there will be the most people.

"Almost every man who thinks he can maintain a family, will have one, and the human species, at this rate of propagation, would more than double every generation. How fast do mankind multiply in every colony or new settlement, where it is an easy matter to provide for a family, and where men are nowise straightened or confined as in long established governments." (Essay xi, vol. i., Lond. 1826.)

#### ART. V.—*The Military Surgeon.*

"Idomeneus thus addressed Nestor:—Haste to your chariot: let Machaon ride by your side and drive to the meet. His life is precious; for one good physician (and such is Machaon) is worth a whole army."—*Homer's Iliad*, Book xi.

If war develops the latent ferocities of human nature, it also elicits all the finer feelings of humanity. Amid the din of battle, traits of character struggle into light—like gleams of sunshine bursting through the blackness of a thunder-storm—which show that the heroism of

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—\*A goddess at Rome who presided over funerals,



the warrior is often blended with the pitying tenderness of a woman ; and that he whose strong right arm has cloven a lane through the ranks of the enemy often stoops to staunch the wounds, or moisten the parched lips of a fallen foe.

It is our purpose to show that *Medicine*—which ever scatters her benefits with a lavish hand ; unthanked and unrewarded—carries her blessings into the camp and the battle-field ; and that no class of men exhibit more nobly all the holier attributes of human nature than these men—our soldier-surgeons—whom the officials of a Government or an army (oftentimes insolent and ignorant), are ever prone to treat with an unmerited *hauteur* and neglect. \* \* \* \*

Machaon was the surgeon of Nestor ; and all our readers who are familiar with the Homeric story, know how much and how fondly the bard dwells upon his courage in the battle, and his skill in his art. We are proud to think that such men do not live only in the "Iliad," but that in every age there have been, and in the present day there are, many who are equally skilful and equally brave. Paré, Baron Larrey, Desgenettes, Bécourt, the Frères Paulet, Guthrie and Ballingall, are names which bear a historic lustre, as the ministrants of mercy and hope to the wounded ; and Lévy, Pontier, Thomson, and Wilson, are men of the present day—formed of the same stern and sterling stuff.

In reading, we recently met an article written by Colonel Ambert, of the 4th Regiment of French Dragoons in which the writer bears testimony to the bravery and heroism of the army surgeons.\* The picturesque eloquence of the Colonel's style tempts us to translate a few passages for the benefit of the reader.

"We look," says he, "with pleasure at a regiment on its march. Our hearts are thrilled by the martial music, and we regard with deep interest its mounted generals who have turned gray in the service of their country, leaving home, comfort, and riches, for the hardships of the tented field. The soldiers who follow on foot, ranged in companies, are their natural successors. These crosses, these epaulettes, and that authority, will become the heritage of those men, who, with burdens on their backs, silently obey."

Would to God we, in England, could say as much ! Little inducement have our soldiers to become skilful in their art, since the merest booby who has a weighty purse, or an aristocratic relation, may be placed over the heads of the bravest, best, and wisest men in the service. Must these things continue ? Truly they manage things much better in France !

But to revert again to the words of Colonel Ambert :—

"Following these long files of soldiers, we observe a man, modestly clad, and walking on foot. Like them he is on the road to battle ; but he is not, like them, on the road to glorious renown and fortune. His duties will be unattended with *éclat* ; his vigils will be unremembered ; and even though he should prove a hero, as did Bécourt at the field of Eylau, he will probably not, like him, be personally rewarded by the Emperor. But an hour will come when this man will be the chief

—\* Col. Ambert's admirable article, originally published in the *Constitutionnel*, lies before us in the number of *L'Union Médicale* for Oct. 31st, 1855.

amongst all this multitude. It is the hour after the battle ! During the fight he will brave death as fearlessly as any other one. Without sharing the excitement of the combatants, he will be a great actor in the bloody strife. He will be calm and reflective when all around him are agitated and distracted. He denies himself emotion, for his hand must not tremble ; his glance must be penetrating, and his judgment must be prompt and unerring. In an atmosphere of grape-shot and smoke he is as collected as in his cabinet. The shrieks of the wounded, and the booming of the cannons disturb him not ; his hand is as steady as in the operating-theatre of an hospital. All ranks appeal to him for aid, and he obeys as promptly the call of the poor soldier as of the mighty general ; he succours the fallen of the enemy as well as the wounded of his own army. The mangled and dying bodies of his companions and friends are brought to him, yet he must stifle in the birth every rising emotion, for the eye of the surgeon should never be veiled by a tear. Kneeling on the bloody straw of the ambulance carriage, he coolly issues his orders, and his moral courage revives the sinking hopes of the wounded ; for his face wears a supreme calm which inspires them with confidence.

“ In these solemn hours the military surgeon is the repository of great mysteries. The dying man entrusts him with tender messages for his far-away family ; one confides to him his riches, another his profoundest secrets. After the battle, the general, the officer, and the soldier hear only the shouts of triumph and songs of joy ; but the surgeon only hears the long and plaintive groaning of the whole army.

“ Night comes ; and all are asleep save him. A vigilant sentinel, he is awake amongst the wounded. Next day, though exhausted with fatigue, he sets out with the ambulance ; he goes to one, and to another ; here, hastily exploring a wound ; there, searching for a bullet in the cavity of the human chest. He goes about giving hope to all ; *saving life*.—so to speak ; wrestling, in despair, with death ; inventing and improvising a thousand methods ; transforming planks and cords into surgical apparatus ; even tearing his clothes into rags to staunch the blood of the wounded. His is the struggle between the blind force of destruction and the intelligent power of conservative science.

“ Such is the man whom we have seen modestly walking at the left of the regiment.”

“ Honor then to him ! His mission in armies is a thousand times sacred ! Wives, mothers, and sisters—ye who, in the silence of the home-hearth tremble for those who, far away from you, are engaged in the glorious duties of war,—calm your fears :—Science and Charity watch over those you love.”

In these enthusiastic words does the French colonel describe the sacred duties of the soldier-surgeons. On some future occasion we may sketch other traits in their character, and give other illustrations of their bravery ; meanwhile, we would conclude these remarks with a noble sonnet, from the little volume of war poems recently published by Alexander Smith and Sydney Yendys, which expresses in bold verse all the heroism and self-denying devotion of which we have spoken :—

Over that breathing waste of friends and foes,  
 The wounded and the dying, hour by hour,—  
 In will a thousand, yet but one in power,—  
 He labors thro' the red and groaning day.  
 The fearful moorland where the myriads lay,  
 Moved as a moving field of mangled worms,  
 And as a raw brood, orphaned in the storms,  
 Thrust up their heads if the wind bend a spray  
 Above them, but when the bare branch performs  
 No sweet parental office sink away  
 With hopeless chirp of woe, so, as he goes.  
 Around his feet in clamorous agony  
 They rise and fall; and all the seething plain  
 Bubbles a cauldron vast of many coloured pain.

Dumfries, June, 1856.

A. M. A. (*London Lancet*, Aug., '56 Am. Edit.,

ART. VI.—*Eggs within an Egg*.—Dr. S. G. Twitty, of Cotton Grove, Tenn., in a private communication, mentions the fact of having recently observed this rare triplicate development of an egg. We have frequently heard of one egg containing another within itself, but never before of two being so contained. Dr. Twitty writes: "The one which I examined had a perfectly formed outer shell, and contained but little yelk, while the white was of greater consistence than ordinary. Within this was found a perfectly formed egg, about the size of the vitellus usual to eggs, enveloped in a firm pellicle much thicker than the ordinary shell-membrane. The contents of this second egg was nearly all white, having only two spots of yelk near the surface, about the size of the cicatricula. Within this second was contained the third egg, which was about the size of a bird's egg, enveloped also in a pellicle, and containing albumen only."—*Charleston Med. Jour.*

ART. VII.—*Comparative Anatomy*.—M. Léon Dufour, whose researches in entomology are so well known, announces that an exception to the general rule in reference to the existence of a nervous system exists in the *Nemoptera Lusitanica*, which has no appreciable nervous system.—*Philadelphia Med. and Surg. Jour.*

ERRATA.—The extraordinary Editorial labor incidental to the issuing of two numbers of this Journal almost simultaneously, is a sufficient excuse for a few typographical errors which appear in this issue, the most material of which are the following :

Page 149, the 3d line from the top ; read 3vi for 3vi.

" 165, the 13th " " " 219 " 2,019.

" 165, " 9th line from the bottom " 1800 " 1890 & 1830.

" 165, " 8th " " " 994, 514 —



*New Orleans, Sept. 1st, 1856.*—Through the politeness of Messrs. D. T. Lillie & Co., the Editor has been favored with the perusal of their Meteorological Journal, the oldest and most complete record in this city, from which the following data are taken in relation to maxima and minima temperatures and the rains in the Spring and Summer seasons of the current year :

Mar.	Maximum	81°—min. 47°—rain (in in. & thousandths)	4.23.
April :	Max.	86½°—min. 60°—rain .....	10.37.
May :	Max.	91¾°—min. 63°—rain .....	0.23.
June :	Max.	92°—min. 73½°—rain .....	9.45.
July :	Max.	93½°—min. 76°—rain .....	15.75.
Aug :	Max.	94°—min. 74°—rain .....	25.36.

From the 10th to the 13th of August inclusive, the rain amounted to 16.88, or nearly seventeen inches ! about two inches less than the annual average at Paris, and three and a half less than that of London.

During these enormous rains a severe gale arose :

“Hoarse murmurs of the main from far were heard,  
And night came on, not by degrees, prepared,  
But all at once; at once the winds arise,  
The thunder rolls, the forky lightning flies.” DRYDEN.

The sea swept over the outlying islands and the depressed littoral of Louisiana, drowning hundreds of its inhabitants, elevating the waters of Lake Pontchartrain whereby a large district of New Orleans was inundated. The rain-flood from the higher or river belt, met face to face the sea in the lower or rear district, covering the streets and floors of the houses several feet deep for nearly a week. In the meanwhile, as since the recession of the flood, the salubrity of the city has been surpassed by few, if any cities of similar populousness in the Republic.

---

THE city mortality for one week ending early in each month of the year 1856, is as follows: Week ending Jan. 6th, 88—Feb. 3d, 67—March 3d, 87—April 6th, 93—May 10th, 104—June 7th, 171—July 5th, 134—Aug. 3d, 91.

## Editor's Office.—Notices.

SEPTEMBER, 1856.

### To Publishers and Book Sellers.

THE titles of works on Science and Literature, which may be sent to this office, will be conspicuously inserted in the bi-monthly catalogue of the Journal. It is expected to give occasionally short critical notices of such works, so far as they may be deemed of value to the patrons of the Journal, especially when there is a dearth of interesting professional matter, yet neither trenching upon the latter, in any case, nor deviating from the practical character and useful ends aimed at in this Journal as paramount.

COMMUNICATIONS RECEIVED.—From Drs. M. M. DOWLER and H. PEAKE.

### BOOKS AND PAMPHLETS RECEIVED.

- New Remedies: with Formulæ for their preparation and administration:* By ROBLEY DUNGLISON, M. D., Professor of the Institutes of Medicine, etc., in the Jefferson Medical College of Phila., 7th edition, with numerous additions. Pp. 769. 8vo. Philadelphia: Blanchard & Lea, 1856. From Mr. J. C. Morgan, bookseller, Exchange Place, N. O.
- Human Physiology:* By ROBLEY DUNGLISON, M. D., LL. D., Professor of the Institutes of Medicine in Jeff. Med. Coll., Phila., Vice-President of the American Philosophical Society, etc., etc., with 533 illustrations: 8th edition, revised, modified, and enlarged; in two vols. 8vo. Pp. 729. 755. Philadelphia: Blanchard & Lea, 1856. From Mr. J. C. Morgan, bookseller, Exchange Place, N. O.
- Braithwaite's Retrospect of Practical Medicine and Surgery; part 33d.* New York: Stringer & Townsend, 1856. Pp. 340. 8vo. From Mr. J. C. Morgan, Agent, bookseller, Exchange Place, N. O.
- Annual Circular* of the Medical Department of the University of Louisiana for 1856-7 together with the Medical Statistics of the Charity Hospital. Pp. 8. 4.
- The Medical Profession in Ancient Times.—An anniversary discourse delivered before the New York Acad. Med.:* By JOHN WATSON, M. D., Surgeon to the N. Y. Hospital. Pp. 222. 8vo. New York, 1856.
- Braithwaite's Retrospect of Practical Medicine and Surgery; part 33d.* Am. Edit. Pp. 340. 8vo. New York, Stringer & Townsend, 1856. From the publishers.
- The Obstetric Memoirs and Contributions of James Y. Simpson, M. D., F. R. S. E., Professor of Midwifery in the University of Edinburgh, etc., etc.* Edited by W. O. PRIESTLY, M. D., Edinburgh, formerly Vice-President of the Parisian Medical Society, and HORATIO R. STORER, M. D., Boston, U. S., one of the Physicians to the Boston Lying-in Hospital, member of the Medico-Chirurgical and Obstetrical Societies of Edinburgh, etc., etc., etc. Vol. II. Pp. 733. Large 8vo., with illustrations. Philadelphia: J. B. Lippincott & Co, 1856. From the Publishers.
- Washington on Assimilation, Consumption and Scrofula.* Pp. 80. Louisville, Ky., 1856.

## TABLE OF CONTENTS.

### ORIGINAL COMMUNICATIONS.

	PAGE.
ART. I.—Hæmorrhage from the extraction of a Tooth; by M. Morton Dowler, M.D. ....	145
ART. II.—On the Solution of the Sulphate of Morphia in Aq. Camphoræ: by C. C. Howard, M.D., of Lowndesboro, Ala. ....	148

ART. III.—Refrigeration in Ardent Fevers: by Bennet Dowler, M.D.,.....	149
ART. IV.—The Vital Statistics of Negroes in the United States: by Bennet Dowler, M.D.....	164
ART. V.—Fragmentary Notes on Pathological Anatomy: by Bennet Dowler, M.D.,.....	175

### PROGRESS OF MEDICINE.

ART. I.—On the Glycogenic Action of the Liver: Notice of the Lectures on Experimental Physiology, applied to Medicine. Delivered at the College of France: by M. Claude Bernard, Paris. 1855: J. B. Baillière. Translated from L'Union Médicale, of May, 1856: by M. Morton Dowler, M.D.....	179
ART. II.—The Terebinthinate Poison: translated by M. Morton Dowler, M.D., New Orleans.....	184
ART. III.—Intermarriage with Kindred—Case of Monstrosity: Translated by M. Morton Dowler, M.D.....	186
ART. IV.—On Tracheotomy in Croup: by Dr. G. Passavant of Frankfort. Translated from L'Union Médicale, of May, 1856: by M. Morton Dowler, M.D., New Orleans.....	187
ART. V.—On wounds of the Brain—Read before the St. Louis Medical Society. By Montrose A. Pallen, M.D.....	189
ART. VI.—Compression of the Brain from Effusion—Trepanning—Recovery. Reported to the St. Joseph Medical Society, April 1st, 1856. By G. C. Catlett, M.D.....	192
ART. VII.—The rate of Pulsation and Respiration in Phthisis, and its relation to the period of the Day, Posture, Temperature, &c. By Edward Smith, M.D., L. L. B., &c. Assistant Physician to the Hospital for Consumption, Brompton.....	194
ART. VIII.—Laceration of the Cornea of Both Eyes, during a Convulsion. Reported by J. W. McKinney, M.D., of New Albany. Ill.....	197
ART. IX.—Remarks on the United States Standard of Specific Gravity for Indicating the Strength of Alcohol, and on the Official Hydrometer. Reaction of Iodine with the Alkaloids. Alcohol in Chloroform. ART. X.—Researches on Ozonized Oxygen. Organic Bodies capable of exciting and transmitting ordinary Oxygen: By Professor Schönbain of Basle. Vicerordt's Archiv. für Physiologische Heilkunde Feb. 15, 1856. Translated from the Gazette Hebdomadaire de Médecine et de Chirurgie, May 16, 1856: by M. Morton M.D., New Orleans....	198
ART. XI.—Cæsarian Section. By Charles S. Mills, M.D.....	206
ART. XII.—An appeal on behalf of Southern Medical Colleges and Southern Medical Literature. By Jas. C. Billingslea, M.D., of Foster's Tuscaloosa co., Ala.....	214
ART. XIII.—Scarlatina.....	217
ART. XIV.—A Review of the Present State of Uterine Pathology: by Henry Bennet, M.D.....	218
ART. XV.—On Antimonial Poisoning: by B. W. Richardson, M.D.....	225
ART. XVI.—Electro-Chemical Therapeutics.....	228
ART. XVII.—From the Gazette Hebdomadaire de Méd. et de Chirurgie of June 5th. 1856. Note Concerning the Discovery of Atmospberic Ozone. By M. Scoutetten. Translated from the French by M. Morton Dowler, M.D.....	230
ART. XVIII.—Physiology. New Researches on the question of Glycogeny: by M. Chauveau. (Académie des sciences, May 19th 1856.) Translated from the Gazette Hebdomadaire: By M. Morton Dowler, M.D..	232
ART. XIX.—Foreign Hospitals.....	235
ART. XX.—A Brief Account of the Hospital at Vienna, in a letter to Prof. Flint. By Edward L. Holmes, M.D., Buffalo, N. Y.....	243
ART. XXI.—Ligature of the Brachio-cephalic artery.....	248
ART. XXII.—Extra-Uterine Pregnancy of Four Years' Standing, the Patient in the interim being twice delivered of a healthy living child. By A. W. Heise, M.D., of Addison, Ill.....	248
ART. XXIII.—Nutrition, Physiologically and Pathologically considered. By James Barnston, M.D.....	250



## REVIEWS.

REV. I.—On some Diseases of Women, admitting of Surgical treatment: By Isaac Baker Brown, F. R. C. S. Surgeon Accoucheur to St. Mary's Hospital; Vice President of the Medical Society of London. &c., &c.	258
REV. II.—Vesico-Vaginal Fistula with an account of A New Mode of Suture: By N. Bozeman, M.D., Montgomery, Ala. Pp. 29. 1856.	259
REV. III.—History of Medicine from its origin to the 19th century, with an appendix containing a Philosophical and historical review of Medicine to the present time: By P. V. Renouard, M.D. Translated from the French by Cornelius G. Comegys, M.D., Professor of the Institutes of Medicine, Miami Med. Coll. Pp. 719. 8vo. Cincinnati: Moore, Wiltach, Keys & Co. 1856.	271
REV. IV.—Report of the Joint Special Committee on the Census of Boston, May, 1855, including the Report of the Censors, with Analytic and Sanitary observations: by Josiah Curtis, M.D., Boston, 1856. Pp. 104. 8vo.	274

## MISCELLANEA.

ART. I.—On the Geographical Distribution of Health and Disease, in connection chiefly with Natural Phenomena: by A. K. Johnston, F.R. S.E.	279
ART. II.—Prejudice against Dissection.	282
ART. III.—The Cadaver and the Cemetery—Laying out.	283
ART. IV.—Populousness of Ancient Nations.	284
ART. V.—The Military Surgeon.	285
ART. VI.—Eggs within an Egg.	288
ART. VII.—Comparative Anatomy.	288
Errata.	288
Maxima and minima temperatures and the rains in the Spring and Summer seasons of the current year.	289
The City Mortality.	290
Books and Pamphlets received.	290

# Memphis Medical College.

The regular Lectures of this College will commence on MONDAY, the 3d of November, and continue Four Months.

## FACULTY :

JOHN MILLINGTON, M.D., Professor of Chemistry and Toxicology.  
AYRES P. MERRILL, M.D., Professor of Principles and Practice of Medicine.  
LEWIS SHANKS, M.D., Prof. of Obstetrics and Diseases of Women & Children.  
ARTHUR K. TAYLOR, M.D., Professor of Anatomy.  
HOWELL R. ROBARDS, M.D., Professor of Surgery.  
C. B. GUTHRIE, M.D., Professor of Materia Medica and Pharmacy.  
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E. WOODWARD, M.D., Demonstrator of Anatomy.

The Fee for the entire Course is \$105 Payable in advance. Matriculation fee \$5 ; Graduating fee \$25 ; Anatomy and Dissection \$10, to be taken once before graduating. Rooms open from the first of October.

A preliminary course of LECTURES, free to all students, and the public, by each Professor, on subjects connected with his department, which cannot be fully taught in the regular course, will be delivered during the month of October, commencing on Monday the 13th of the month.

CLINICAL INSTRUCTION is given twice a week at the Memphis Hospital. A City Dispensary Clinique has also been established at the College, at which operations are performed and cases prescribed for and lectured upon daily.

The College possesses an ample Museum and complete Chemical and other apparatus.

Students desiring further information, will address Prof. L. Shanks, M.D., Dean, or on arriving in the city, call on him at his office on Main street.

L. SHANKS, M.D., DEAN.

1t. 2-13

# University of Louisville.

The Twentieth Annual Course of Lectures in this Department will commence on the First Monday in November next, and terminate on the last of February, under the following arrangements :

HENRY MILLER, M.D., Professor of Obstetric Medicine.  
L. P. YANDELL, M.D., Professor of Physiology and Pathological Anatomy.  
LEWIS RODGERS, M.D., Prof. of the Theory and Practice of Medicine.  
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JOSHUA B. FLINT, M.D., Professor of Surgery.  
ARCHIE B. COOK, M.D., Demonstrator of Anatomy.

The fee for admission to the Lectures of each Professor, is \$15 (\$105 in all) payable invariably in advance. Matriculation and Library fee together, \$5; Graduation fee \$25; Practical Anatomy and Dissection, \$10 ticket to be taken at least once before graduation. Rooms open from First of October.

A preliminary Course of Lectures will be delivered, without additional charge during the month of October.

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~~Good~~ Good boarding can be procured at \$3 a week.

B. R. PALMER, M.D., DEAN OF THE FACULTY.

Louisville, Ky., July, 1856.

2 1t-13

Since the last issue of this Journal, a change has taken place in the Faculty Dr. J. M. ALLEN has resigned the Chair of Anatomy, and Dr. T. G. RICHARDSON of Louisville Ky., has been elected to fill the vacancy. Dr. Richardson has long been connected with the Louisville Schools, and is well known as a successful teacher of Anatomy; he is also author of a work on that subject. See advertisement below.

## PENNSYLVANIA COLLEGE--MEDICAL DEPARTMENT.

SESSION OF 1856-57.

The regular course of lectures will commence on Monday, October 13th, and will be continued to the first of March.

### FACULTY.

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ALFRED STILLÉ, M. D.,	Prof. of theory & practice of Medicine.
JOHN NEILL, M. D.,	Prof. of Surgery.
T. G. RICHARDSON, M. D.	Prof. of Special & Surgical Anatomy.
JOHN J. REESE, M. D.,	Prof. of Medical Chemistry.
JOHN. B. BIDDLE, M. D.,	Prof. of Therapeutics & Materia Medica
FRANCIS G. SMITH, M. D.,	Prof. of Institutes of Medicine.

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Clinical Instruction will be given by Professors BIDDLE and NEILL at the PHILADELPHIA HOSPITAL, BLOCKLEY, during the entire term of the session, in conjunction with other members of the Medical Board of the Hospital. The Students of Pennsylvania College—both FIRST COURSE and SECOND COURSE—will be furnished GRATUITOUSLY with the ticket to the Philadelphia Hospital. Second course Students have the option of receiving gratuitously the ticket to the Pennsylvania Hospital. A Clinic will also be held at the College every Wednesday and Saturday morning throughout the session.

FEES.—For the entire Course of Lectures.....	\$105 00
Matriculation, (paid once only,).....	5 00
Graduation.....	30 00

The Dissecting Rooms will be opened in September, under the direction of the Professor of Anatomy, and the Demonstrator.

Preliminary Lectures will be delivered during the fortnight preceding the opening of the session.

JOHN J. REESE, M. D., REGISTRAR.



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The TWENTIETH (Winter) Session will begin on the second Monday in OCTOBER, 1856.  
The TWENTY FIRST (Spring) Session will begin on the second Monday in MARCH, 1857.  
Degrees will be completed at the close of each Session.


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 For announcement or other information, address

HOWARD RAND, M. D. Dean.

1t. 2-13.

# ST. LOUIS MEDICAL COLLEGE.

The Regular Lectures in this Institution will commence on the first day of November 1856, and continue until March. A preliminary Course at the College, as also Clinical Lectures at the Hospital and the Dispensary, will be delivered without extra charge, during the month of October.

M. L. LINTON, M. D., Professor of the Principles and the Practice of Medicine.

A. LITTON, M. D., Professor of Chemistry and Pharmacy.

CHARLES A. POPE, M. D., Professor of the principles and the Practice of Surgery and Clinical Surgery.

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Fees for the entire Course, \$105. Matriculating ticket (paid but once,) \$5. Dissecting ticket \$10. Hospital ticket gratuitous. Graduating Fee, \$20.

Students and others, desiring further information, can either address the Dean, and he will forward them a descriptive pamphlet, or on arriving in the city, call upon him at his office, south-west corner of 10th and Locust street, or on the Janitor of the College, corner of Seventh and Myrtle streets.

July, 1856.

1-2t.-13.

CHARLES A. POPE, M. D., Dean.

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New Orleans: 1854. 66 large octavo pages. Price—50 Cents per copy; three copies for \$1; 100 copies for \$25.

 Orders should be directed to Delta Office, 76 Camp-street, New Orleans.

The editor of this journal considers this pamphlet the best that has been written on the subject. It contains much valuable matter in a small compass, and adds to the many laurels already won by the indefatigable author in this and other branches of investigation. His last chapter, while it has all the vigor and truthfulness of the poet, introduces us to the bedside of the dying and the dead—goes beyond the usual boundaries of observation, and brings back a wreath to crown the altar of Science, from a region too sterile for the poet, and even for the less energetic philosopher.—[*Phil. Med. and Surg. Jour.*]

In the sixty-six pages, of which this pamphlet consists, Dr. Dowler has contrived to condense more matter of an important and instructive character, bearing directly upon the etiology and character of Yellow Fever, than would suffice, if fully developed and examined in all its relations, to fill a goodly sized volume of several hundred pages; and that, too, without any undue extension of subject or prolixity of style.—[*The American Journal of the Medical Sciences.*]

# THE NEW ORLEANS MEDICAL AND SURGICAL JOURNAL

FOR NOVEMBER, 1856.

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## ORIGINAL COMMUNICATIONS.

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ART. I.—*A Cogitation on Public Health.* By M. MORTON DOWLER, M. D., New Orleans.

It is generally conceded that in the City of New Orleans, during the spring and summer of the present year, there has existed a comparatively satisfactory state of public health. There appears to be no difficulty in arriving at this conclusion and at the fact that the infantile population have been the principal sufferers. We of New Orleans, however, in common with the people of other large communities, cannot, on due reflection, fail to lament the absence of that definite kind of information, without which there can be no rational appreciation of the public health. There does not appear to be anything like a hungering and thirsting, on the part of the public, for ~~any~~ knowledge in this behalf beyond the random conclusions which are habitually drawn, and the popular apathy appears to imprint itself more or less on the profession. The great point of popular, as well as professional observations, is the *current mortality*. Death proclaims his triumph from the house-tops, and in the highway, and his grim statistics, excite the public pulse : but the *current suffering* too must go for something, as well as the current mortality. The former, however, is a published and fixed fact ; whilst the latter, when not eventuating in the former, is virtually a *local secret*, which it is deemed expedient to be forgotten as speedily as possible. There are mementos which are done in marble, and there are others which are, as it were, written in the sand, and these are of them.



Indeed there are circumstances which divest even the mortality itself of its wonted impression on the public mind, as when we are told that *the deaths are principally amongst children*. The mass of the public look mainly to the loss in staff, and rank and file, amongst those who are shoulder to shoulder actively fighting the battle of mature life. The childless and unwedded are numerous; and the retired, quiet, sincere grief, excited by the vacated chair or cradle, tells not so directly on the public mind.

While the current mortality is a subject of commanding interest, how important also is the simultaneous consideration of questions such as the following! What is the number, and what the ratio of those who have suffered and survived? What has been the manner and form of their suffering? What are the specialities and generalities afforded by these cases? From all that is known or conjectured, what will be the probable effect of the current sickness on the future of the survivors, as to health and longevity? How many, for instance, that have during the season suffered from measles, scarlatina, mumps, whooping cough, etc., without being enrolled on the bills of mortality, are or are not likely, in a few short months, to succumb to the multifarious sequelæ of the pests of early life? What has been the treatment, what the beneficial and what the injurious results of remedies? In short, what about the living, rather than the dead?

The consideration of scores of such questions as these, is inseparably associated with so seemingly simple a thing as a true history of the public health; and is quite as essential, as summing up the number of the dead. Nor is it difficult to point out a host of contingencies in which the current mortality of a city would be of little avail in determining the coterminous public health. And when, to crown all, we realize the fact that in counting the dead, we are so wholly unsupplied with the necessary train of important and governing antecedents, we again realize that we learn only sufficient to render "darkness visible." It is often quite as well to observe as to count.

"How is the health of the city?" is the set question, propounded to the physician on all occasions. The true answer to this question is, "I don't know, nor does any one else!" A true history on the subject is amongst the possibilities, not the actualities.

Amongst the circumstances absolutely necessary in the approximation to a true history of the public health, it follows from what we have said, that it is in every respect essential that there should be a great concurrent movement on the part of the mass of the profession, by which the observation and experience of each should be brought to contribute to the

common object. With this great resource, the chief remaining source of error to be overcome, would consist in the fact that a very large portion of the sickness, and even mortality, never comes at present under the eye of the physician. How true is it that *truth is one, error is many!* The maxim that figures cannot lie, was intended as a tribute of respect to the *true figures* only. All others can.

But it may be said that the diligent observation of a single member of the profession, may be received as pretty conclusive in relation to the public health, on the principle of *ex uno disce omnes*. Indeed this is virtually the basis on which the final verdict is too generally rendered. The newspaper press honestly, indeed, in search of the truth, and earnestly yearning for the *favorable truth* on the health question, makes application to three or four of the prominent and esteemed members of the faculty having, perhaps, a limited and select circle of observation, who attest on their knowledge and belief to a clean bill of health for the city. No ordinary occurrences can overturn this cherished conclusion; and yet it may be in fact a most ludicrous error. On this basis even existent epidemics have been ignored. The fields of different physicians' observation present the widest contrasts in all the environment that may favor the presence or absence of disease. For instance during the last eight days I have been called to new cases of measles in private practice, but the incidental fact of being medical attendant in the St. Joseph's Asylum on Josephine street, has brought under my care during that time forty cases of the disease—an extraordinary prevalence which has been governed alone by proximity and contact amongst 125 children.

To bring about the desired result every practitioner should contribute to the best of his ability. As it now is, whether we be smitten with the pestilence or be comforted by the assurance that the public health is good beyond parallel, our histories of the passing state of things in this behalf, are crude, unsatisfactory, and inconclusive. Private practice is for the most part a sealed book in all save that which discourseth of the tomb.

These remarks were written as a prelude to an intended exposition of my observation and experience touching the public health during the present season, proposed with a view of contributing an item on the road to the object of which I have spoken. My necessary engagements, however, compel me to recede from my design. My own shortcomings in the premises leave me but little right to exhort others to come up to this work of reform. Let us all, however, console ourselves with the reflection that the time may arrive when such action shall be taken on part of the united profession, that a very definite answer may be made to the question—"How is the public health?"

But though the action on the part of the profession, of which we have spoken, be absolutely necessary to a solution of the difficulties, not only on the subject of the current mortality, but also on that of the *current suffering*, we must cast our eyes for aid far beyond all that can be reasonably expected from this source in order to work out the problems.—The fact that so little is known of the real condition of our people, in the premises, and that the subject takes so feeble a hold of the public mind, may to a great extent be very readily explained. An essential requisite is that our city and state legislatures should directly encounter and grapple with evils which they have hitherto not ventured to look fully in the face. The prevailing public issues look quite in a different direction, relating almost exclusively to the process by which men are put in and out of office, and thus questions involving the very first principles of humanity, moral obligation, and good government are overshadowed. The perennial suffering, wretchedness and unwholesome demoralization existing in this city, as modifiers of the public health, and which are proper subjects for legislative attention, are perfectly obvious to all. The subject however has few attractions to the legislator, is unavailable as political capital; and to point out to him the fountains of disease and death, is equivalent to the impertinence of bringing

“——A slovenly unhandsome corse

Between the wind and his nobility.”

Though we are aware that it is one of our blessed republican privileges to bestow all our surplus indignation on our rulers, we cannot say that its exercise is much in accordance with our taste or inclination. We have never found fault with the authorities for the avoidance of doubtful and impracticable measures. We neither desire them to fill up with earth the “Island of Orleans,” nor to underlay the same with a platform of cast iron sewerage. We have never favored the expenditure of millions of money for the prevention of epidemics, of the causes of which nothing whatever is known; and should the authorities see proper to get rid of their quarantine and the Board of Health, we should be the last to complain. Nevertheless the almost total neglect of proper legislative measures on the plain, obvious and remediable causes of suffering and death in New Orleans, is a just and tenable ground of reproach. Amongst these it may suffice for the present that we merely allude to the enormous evils, in this respect, which attach themselves to the pauperism and destitution which exist in this city, and which the authorities have up to the present, adopted the desperate alternative of ignoring.

The erection of an ample Alms-House is a measure which should have been effected twenty years ago, without regard to the immediate



expense, and the usual and necessary means adopted to meet the gathering evil. This measure, however, so imperatively called for by every consideration of humanity and public health, awaited the munificence of a Touro, and only then to languish and be forgotten in the face of his benevolent and most opportune bequest.

The subject of pauperism and destitution has been repeatedly thrust on the attention of the authorities of New Orleans. In 1851, Mr. T. H. Shields, a member of the then Second Municipality Council—who we believe had before that time repeatedly agitated the subject, introduced and procured the passage of a resolution for the appointment of a joint committee from the three municipal councils, and from Lafayette City, for the purpose of reporting on the subject. Happening, ourself, to be, at that time, a member of the Council of the City of Lafayette, we were appointed a member of the joint committee, and was by that committee appointed to prepare a report, which we produced at some length from ample statistical resources, discussing the subject under four general heads, one of which was entitled ; “ *The Sanitary Condition and Reputation of the City.*” The report, which was adopted by the joint committee, after defending the city of New Orleans against the extreme charges of insalubrity, holds the following language in behalf of the erection of an Alms-House :

But man is mortal, and every city presents its fearful bills of mortality, and amongst the causes which contribute to swell the mortality of New Orleans and Lafayette, and to injure the sanitary reputation of your cities, destitution and pauperism play a remarkable and conspicuous part. It avails not the poor here, even if it be true that they rarely fall victims to *direct starvation*. It avails them not if destitution play another part in the drama, and leads them to a death but little less deplorable. Take the indigent sick of this community ; how many impediments, absolute penury opposes to their recovery from disease and debility ! The only resource provided for the sick poor, is that truly noble institution, the Charity Hospital. The purposes of this institution are admirable, but very limited in extent. Its good offices are applicable only during the continuance of urgent disease. When the debilitated convalescent finds himself in possession of sufficient strength to leave his bed, he finds the Charity Hospital wanting in all the capabilities of a temporary home, and a temporary support, until his physical energies are restored. In this condition he leaves the Hospital. With feeble step he makes his way into the street, to encounter our humid and alternately hot and cold atmosphere, and the fierce rays of a burning sun, penniless and houseless. Here a temporary home and a temporary support would soon restore him to health, industry and usefulness ; but he is wholly unprovided for in New Orleans, and falls a victim to his destitute condition. The deplorable mortality, which is the direct result of this state of things, forces itself on the observation of the community. Owing

to the limited purposes and the insufficiency of the relief of the Charity Hospital, the greater portion of the indigent sick, and especially those having family ties, prefer to encounter the miseries and poverty of their own wretched abodes in sickness. Here are at once manifested the extreme of destitution and the extreme of mortality.

Nothing can be clearer to the minds of your committee, than that pauperism and destitution are a deplorable source of mortality here in a variety of ways, and that for the want of the application of the proper remedy—the remedy applied in all our Northern cities—the reputation of your city for salubrity has greatly suffered, both at home and abroad, and that many of your vital interests, commercial and otherwise, have commensurately suffered. The causes by which disease is produced, and consequently the origin of the mortality of a city, are, to a great extent, either conjectural, or wholly unknown. So far, however, as they are, or can be known, it is one of the most imperative duties that can devolve on the authorities of a city, to effect their removal, so far as it is within the bounds of possibility. In the evils, of which your committee have spoken, the cause of mortality is plain, the removal practicable, and the motive to apply the remedy appears with all the force of moral obligation.

We have reason to believe that the labors of the Committee received the unanimous approval of the public, but they never attracted the least attention, whatever, on the part of the Councils of the City.—There appeared to be an utter repugnance on the part of the authorities to even look on the rottenness in their midst. The answer to the question, “How is the public health?” as exhibited in the premises to the Councils, produced no response. “Take any shape but that.”

Happily this remissness as seen in our public legislation, affords a strong contrast with the private action of our citizens, as evinced in the various elegant and commodious houses of charity, and asylums, which have sprung up at the hands of private enterprise, in all parts of the city, where the orphan and the destitute widow are the recipients of the necessities of life, and where charity is practised with all the fervor of a religious duty. In private life, our people are a living exemplification, in the words of the poet :

“An ear inclined to every voice of grief;  
A hand that opes spontaneous to relief;  
A heart whose impulse waits not on the mind,  
To freeze, to doubt where charity’s enjoined;  
But springs to man’s warm, instinct for mankind!”

Nobly do these charities tell on the subject of which we have spoken, not only coming to the rescue on the health question, but vindicating the great platform of humanity. Food and raiment are not only health, but they are to a great extent morals, law, and religion. From the records of these institutions a valuable mass of statistics might be com-

piled, which would not only tend to the edification of the public, but would form a guide to legislative action. No Committee of the Council, has ever enlightened the public on these charities.\* The inadequacy of private charity, however to meet all the emergencies attendant on pauperism and destitution in this city, is apparent to all.

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ART. II.—*Case of Cachexia Africana, or, Dirt-Eating.* By HUMPHREY PEAKE, M. D., of Arkadelphia, Arkansas.

THE subject of the following report was a negro boy æt. 9 years, the property of Mr. J. B. McDaniel, of this place. The symptoms, history, &c., were furnished me by Drs. T. J. Hart, and W. D. Ellis, through the courtesy of whom I was present and assisted in the examination post mortem.

The boy was taken ill on Sunday, June 29, with violent pains in the abdomen, to which vomiting soon succeeded. Having been for some time previous, subject to attacks of what was supposed to be colic, he was given a considerable quantity of pepper tea,—a remedy which had formerly procured him relief. This having failed to give relief, however, various other domestic remedies were resorted to, which were alike unsuccessful. Thus things progressed until Monday evening, the patient having grown worse and worse, from the time he was taken, when, Dr. Dr. J. T. Hart was called to the case. The Doctor found him suffering the most excruciating pains in the abdomen, with most exquisite tenderness on pressure, particularly in the umbilical region; with frequent vomiting. Pressure in the right iliac region, also, gave considerable pain. The abdomen was enormously distended and tympanitic. Decubitus, supine, with extended lower extremities. There was also partial suppression of urine. When an attempt was made to raise him to the erect position, he could not be induced to flex the thighs upon the pel-

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\* What is the number of houses of charity in this City? What the estimate value of property? What the date of erection and general history? What the number of admissions in the several asylums, male and female, nativity, classified age, diseases, mortality? What are the pecuniary resources, regular and casual; and what the general economy by which they have been supported? What is the average daily expense for the support of each inmate? What the diet, clothing, bedding, and protection against the heat of summer and cold of winter? What is the construction of buildings, and general sanitary and hygienic environments? What the moral, physical, and mental specialities superinduced by asylum life? What the condition with regard to education? What the value and availability of recent charitable bequests? These and numerous other kindred questions, we hope to see elucidated by a report from the City Council.



vis, in the least, but remained perfectly straight and rigid, so that he had to be raised as we would raise a stick of wood. When brought to the erect position, he would not move one foot before the other, nor make any attempt at locomotion, on account of the pain it caused. It was now ascertained that he was in the habit of *eating dirt*, soapstone, and even pebbles; and that he had not had an evacuation *per anum*, since the Saturday preceding. Purgatives were given, both by the mouth and in enema, amongst others, Oleum Tiglii. An evacuation, apparent from the lower bowel, was finally obtained, but with no alleviation of suffering. The retching and vomiting, too, remained unabated. This was the state of things on Tuesday morning when Dr. W. D. Ellis was called in consultation. The patient continued to grow worse until 12 o'clock on Wednesday, when he died, remaining perfectly sensible to the last.

Autopsy 5 hours *post-mortem*. On opening the abdomen, a quantity of foetid gas escaped. The abdomen contained, besides, about a pint and a half of fluid—that in the lower portion being of a yellowish brown appearance, that higher up approaching more nearly in character to serum. Through the whole of the fluid, was mixed a large quantity of fibrin in the flocculent form,—such as I have seen in cases of hydrops pericardii. The peritoneum was most extensively inflamed—both that part covering the intestines, and that reflected upon the abdominal parietes, including the omental portion. The opposed surfaces of the intestines, were adherent in every part. The intestines of the convolutions contained quantities of flocculent lymph. The small intestine in the umbilical region, presented dark spots of considerable size. The iliac fossæ, the right particularly, contained each a considerable quantity of the flocculent form of fibrin—the cavity between the bladder and the rectum, was full of the same substance. Near one-third of the fluid contents of the cavity, must have consisted of this flocculent lymph.—Neither intussusception nor obstruction of any kind, was found either in the large or small intestines. (The probable diagnosis had been intussusception.) In the cæcum, however, a number of pebbles, varying in size from that of a grape seed, to that of a cherry stone, were found, some of these were of an angular form, one of which, had caused a perforation of considerable size, at the juncture of the appendix vermiformis and cæcum. This had caused the escape of a portion of the contents of the canal, which was, I might say, of course, followed by death. The appendix cæci, was in a high state of inflammation, and the coats of the cæcum greatly thickened.—July 9, 1856.

ART. III.—*Abscess of the Liver.* By A. DAVIS BRASHER, M. D.,  
Belle Point, Arkansas.

On the 11th of June, 1856, I was called to W. Oden, æt. 20, of effeminate conformation, and presenting the conditions of general anæmia. Upon examination, I found a tumor the size of a goose egg, in the left submaxillary region, and another, much larger, in the left hypochondrium; with extreme tension and tenderness of the abdominal parietes.

Previous history; four years ago, had an attack of intermittent which subsided after four months, ending, as his physician said, in chronic enlargement of the liver. Subsequently, has been under treatment at different times but has never entirely recovered. Symptoms; pulse 120; small and hard; tongue pale and coated; respiration 40; bowels torpid; urine natural in quality and quantity.

*Treatment.*—Ordered emollient poultice to the hypochondrium with camphor liniment; a drachm of mercurial ointment to be rubbed in the submaxillary region; gave Pulv. Rhei. grs. xx, and. left R. Sulph. Quin. grs. xx; Gum. Camph. grs. xii; ft. pulv. iv; one every three hours.

June 12th.—Pulse and tongue as yesterday; no abatement of abdominal tenderness; bowels moved last night; slept badly; continued poultice, quinine and camphor, for night; left R. Hyd. chl. mit. grs. iv; Sulph. Morph. gr. ss.; to be taken at night. Submaxillary tumor diminishing.

13th.—Rested tolerably well last night; pulse 100, soft; respiration natural; submaxillary tumor diminishing; hypochondriac increasing; tenderness over abdominal and lumbar regions extreme. Continued treatment.

14th.—Submaxillary tumor entirely gone; that in hypochondrium more prominent and pointed; apex posterior; fluctuates slightly under pressure. Knowing the danger of puncturing in this region, I determined to wait twenty-four hours longer in order for nature to assist me as far as possible. Continued the quinine and camphor as before, with the poultice, omitting the liniment. Gave Ol. Ricin. ʒj.

15th.—Rested well last night; bowels moved this morning; apex of tumor softened, with decided fluctuation; pulse 98, regular; tongue natural. The patient being anxious to have an incision made and everything appearing as favorable as could be expected under the circumstances, I placed him in a semicumbent position, and made a free opening, drawing off twelve ounces of thick healthy pus. Fearing prostration, I closed the aperture with adhesive strips;—ordered the poultice to be reapplied; had the abdomen and loins rubbed with two drachms of

mercurial ointment ; left R. Pil. Hyd. gr. x, Sulph. Quin. grs. x : ft. pil. ij. ; to be taken at bed-time, and Tinc. Ferri. Chlo. gtt. xv, every eight hours, with nourishing diet and a small quantity of milk punch at intervals of two hours.

16th.—Rested well last night ; pulse 90 ; feels much better ; drew off eight ounces of pus, (thinner.) Continued treatment.

17th.—Tenderness subsiding ; drew off six ounces of serum, intermixed with pus globules. Continued treatment, increasing Tinc. Iron to twenty drops.

18th.—Bowels torpid ; gave ol. Ricin. ℥j. ; general symptoms improving. Continued treatment.

20th.—Able to sit up ; appetite good ; removed adhesive strips, and allowed the discharge to flow *ad libitum*. Continued treatment.

23d.—Able to be up ; continued treatment ; ordered cold baths every evening ; the abdomen to be rubbed with R. Tinc. Opii. ℥j ; Gum Camph. ℥j. Ol. Olivæ ℥ij ; ft. liniment after each bath.

26th.—Improving ; ordered bath twice per day ; Gave Pil. Hyd. grs. x, at night ; and increased Tinc. Iron to twenty-five drops every eight hours.

July 1st.—Improving ; continued treatment as before.

10th.—Called at my office and reported himself free from any inconvenience from abscess, and aside from debility feeling perfectly well. From that time up to the present (Aug. 25th,) he has continued to improve, and has now every appearance of being in perfect health.

When I was first called to this patient, I was at a loss whether to attribute the tumor to a morbid condition of the left kidney, spleen, or left lobe of the liver ; but upon examination of situation, symptoms, and general condition of the patient, and from the fact that all the emunctories, except the liver, appeared to be performing their functions in a natural order, I am confident that the abscess originated in the left lobe of the liver, consequent upon chronic congestion of that organ. Had the abscess implicated the whole lobe, while the patient was thus suffering from general anæmia, death, in all probability would have been the result.

ART. IV.—*Fragmentary Notes on Pathological Anatomy.* By BENNET DOWLER, M. D. (*Continued from page 178.*)

HISTORICAL NOTE.—Glimpses of the true import of pathological anatomy scarcely appear in the writings of the ancients. At least after the death



of Galen, ignorance of this science prevailed for many centuries. During the long night of superstition in the dark ages, the dissection of the human body was regarded with an abhorrence characteristic of blind, unreasoning superstition.

The fundamental idea of an existing scientific connection between disease and morbid alterations discoverable by post-mortem examination, is virtually modern,—or if known to the ancients, it was sterile and exercised no control—achieved no systematic, practical result until last century.

Aurelius Cornelius Celsus, the Roman Hippocrates, who wrote about the commencement of the Christian era, seems totally to ignore the advantages and even the existence of pathological anatomy proper, although in his brief anatomical descriptions, he recognizes the benefits derivable from a knowledge of the structure and positions of the internal organs: *Facilius autem omnium interiorum morbi curationesque in notitiam venient, si prius eorum sedes breviter ostendero.* L. IV. C. 1.

From the fourteenth century of the Christian era, anatomy began to assume importance, and with it, the anatomical characters of disease—deviations from the healthy or normal structures, attracted more or less attention. But neither normal nor morbid anatomy was practically cultivated to much purpose until late in the world's history. "The dissection of the human body was first publicly practised by Mondini at Bologna, about the year 1315." "Cortesi, who wrote at the beginning of the 17th century, and who after having been professor of anatomy at Bologna, filled the chair of medicine at Massana, complains that he was prevented from finishing a treatise on Practical Anatomy, in consequence of having only been able *twice to dissect a human body in the course of twenty-four years*, whereas in the Academies of Italy there is an opportunity *once every year*."

"We may distinguish," says Bichât, "two classes of physicians; those who have only observed, and those who to observation have added post-mortem examination. The former are very numerous; the latter are confined to a very small number, and are only to be met with in the last century. Hippocrates, Celsus, Aretæus, and all the Greek authors, have been satisfied with observing the symptoms; and consequently most of their diseases are badly described." (Bichât. Path. Anat.)

Even in enlightened England, as late as the 15th of August, 1832, "it was illegal for the medical practitioner or teacher of anatomy to possess any human body for the purpose of dissection, save that of murderers executed pursuant to the sentence of a court of justice, though he was liable to legal proceedings for ignorance of his profession; and

while the charters of the medical colleges enforced the duty of teaching anatomy, the law rendered such a course impracticable. But as the interests of society require anatomy to be taught, the laws were violated, and a new class of offenders and new crimes sprung up as a consequence of legislation being inconsistent with social wants. By making anatomical dissection part of the penalty of crime, the strong prejudices which existed respecting dissection were magnified tenfold. This custom existed in England for about three centuries, having commenced early in the sixteenth, when it was ordered that four criminals should be assigned annually to the corporation of barber-surgeons. The 2 & 3 Will. IV. C. 75, repealed sec. 4 of 9 Geo. IV. C. 31, which empowered the court to direct the body of a person convicted of murder to be dissected after execution. Bodies are now obtained for anatomical purposes under the regulations enacted in 2 & 3 Will. IV. C. 75, which is entitled 'An act for regulating schools of anatomy.' The preamble of this act recites that the legal supply of human bodies for anatomical examinations was insufficient, and that in order further to supply human bodies for such purposes, various crimes were committed, and lately murder, for the sole object of selling the bodies of the persons so murdered. The act empowers the principal secretary of State, and the chief secretary for Ireland, to grant a license to practise anatomy to any member or fellow of any college or physicians or surgeons, or to any person lawfully qualified to practise medicine, &c., on application countersigned by two justices of the place." (*Nation. Cyc.* I. 683-4.)

It is now nearly a century since Morgagni's principal work, *De Sedibus et Causis Morborum per Anatomen indagatis*, appeared.\* Morgagni's immediate predecessors and contemporaries formed a bright constellation in which were Modini, Bartholin, Donatus, Tulpus, Vesalius, Ruysch, Swammerdam, Leenhoeck, Glisson, Fabricius, Sylvius, Cæsalpin, Asellius, Harvey, Van Helmont, Vieussens, Willis, Malpighi, Borelli, Bernouilli, Stahl, Hoffmann, Boerhaave, Sauvages, Peyer, Linnæus, Valsalva, Fallopius, Eustachius, &c.

These were but twinkling lights, in so far as pathological anatomy is concerned, and receded before a brighter orb, the great Morgagni. Yet he in his turn was soon surpassed in pathological discoveries by others who before the close of the eighteenth century made great advancements. The names of these anatomists though still sprinkled over the text books of the student, are dying out, as time rolls away.

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\* A translation of this work from the Latin into French, by MM. Desormeaux and Destouet, published in Paris, 1820-24, in ten octavo volumes—(5,695 pages) without abridgement.

The nineteenth century is distinguished not only by many discoveries, but by its indissoluble consolidation of the sciences of physiology, pathology, and morbid anatomy.

The natural history of disease and of the morbid change which it causes, has been illustrated in the inferior animals by means of experiments and artificial perturbations, including poisons introduced into the economy.

It has been seen, also, agreeably to the axiom of Broussais, that the pathological condition is but an exaggerated or disturbed state of the physiological phenomena and functions.

**SCEPTICISM IN PATHOLOGICAL ANATOMY.**—The modern sceptics in, and objectors to, pathological anatomy, find no difficulty in raising doubts and objections which the anatomist, as yet, is unable to answer; but the sagacity and the ratiocination of such objectors may very justly be called in question. Many surgical and medical diseases are already clearly connected with certain lesions. All those diseases, such for example, as consumption, dysentery, certain diseases of the heart, aneurisms, &c., which reveal their respective lesions even before death, afford, upon the evidence of analogy, the utmost encouragement to hope for further advances in the pathological direction. The means of exploration are not exhausted—never will be while science is progressive. The knife, the microscope, chemistry, the physical diagnosis and agents have not yet accomplished their mission. As we know not all, should we, therefore, be content to know nothing? Has any characteristic lesion ever been discovered by rejecting rationalism for sciolism, indolence for despair? What encouragement does the history of past ages, or the experience of the present, afford for the sure progress of a pathology founded solely on symptomatology and the uncertain speculations put forth concerning inappreciable and unknown lesions of the blood—lesions of innervation and the like? These, as substitutes for the imperfections of morbid anatomy, are infinitely inferior to the most forlorn-hope despatched in the right direction, that is to the dead house, and to the field of experiment upon the inferior animals.

**PATHOLOGICAL DEFINITIONS.—MICROSCOPY.**—It is difficult to speak, or write understandingly without clear definitions, and recognized standards of comparison. Criteria enable each to understand the other, so that all may mean by certain terms, certain definite ideas, facts, and things, and nothing else. Precise definitions that may be tested physically by the things described, are the great but as yet unrealized *desiderata* of pathological anatomy.



In describing the anatomical characters and appearances of disease, whether in the solids or fluids, considerable latitude of expression must obtain, in the present state of our knowledge. Thus effusions, exudations, and concretions, though variously compounded, may be called lymph, serous, purulent, albuminous, or fibrinous; but whether they be really as well as apparently such in the strict sense of the chemical nomenclature, may not always be essential to their significance as morbid processes and signs. At all events, few anatomists can, in connection with a tedious dissection, perform exact chemical analysis in order that they may in this respect achieve an exact chemico-pathological appreciation. This over nice zöo-chemical route, though pursued by a few great masters of our day with considerable success of late, has not achieved for pathological anatomy, results so generally useful, as that usually followed in tracing the phenomenal history of lesions, together with their symptomatic antecedents.

The recent revival of microscopy is exercising the most beneficial influence upon our knowledge of physiology and the ultimate structures of the tissues and fluids, but in regard to the differential diagnosis of natural and morbid products, little, comparatively and practically speaking is fixed and known. The profound researches of the old masters of the microscope, were, to a great extent, barren to the practical physician for two centuries.

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VASCULARITY.—*Vascularity*, for example, is an important criterion or rather an opinion as the matter now stands, for no physical description of it is sufficiently definite to enable those little accustomed to the making of post-mortem examinations, to appreciate in a precise and satisfactory manner, either the agreement or disagreement between morbid vascularity and the natural condition of the blood vessels in certain organs. In this particular, the organs differ greatly among themselves in their normal state. The natural vascularity of the pia mater, or spleen, would be, for the arachnoid, pleura, peritoneum, pancreas, and many other organs, morbid.

It requires many and varied observations upon the natural and morbid anatomical appearances, to enable one, in some instances, to arrive at even probable conclusions in regard to the influence and pathological import of lesions—whether they be primary, or secondary—principal, accessory, or accidental, in relation to a fatal result.

The honest dissector of some experience, may be in doubt while writing in his note book—*vascularity*—for, an individual having had good health, being full of blood, and dying suddenly from accident or from

acute disease, often presents phenomena, apparently warranting such a designation, though not strictly referable to antecedent disease. Abundance of blood vessels and twenty and thirty pounds of blood, naturally must have "a local habitation," if not "a name," in the dead body.

**INJECTION.**—*Injection*, is another word even more indefinite than *vascularity*, expressing as it does a condition which is influenced by many circumstances beyond the pale of a primary, or fundamental lesion, among which may be named the agony, the persistence of post-mortem capillary circulation, great changes from post-mortem heat, together with physical and chemical, including endosmotic and gravitative agencies, the permeability, porosity, and density of tissues.

Injection and turgidity are in many instances quickly changed, or wholly effaced soon after death. Injection and ecchymosis of even the eyes thus disappear often in a few minutes. The skin is another type of injection which may take place before, during, and soon after death.—Before death, occasionally, spots, blotches, stripes, or diffused injection begins to appear on the back, sides, neck, and legs, especially, upon dependent parts, showing the incipient action of the law of gravity, mechanical permeation, cadaveric imbibition, penetrability, etc.

The red, livid, marbled, yellow appearances, which cannot be referred to gravitation or position, including copious effusions of blood and serosity in the arachnoidal, pleural and peritoneal sacks, occurring during, or more particularly soon after death, are, as already observed, doubtlessly, the effect of endosmotic force, the nature of which is little known, though its fundamental laws have been experimentally established not only by the distinguished Dutrochet, (*Mémoires*. T. II. Paris, 1837,) but by many others.

The mucous tissue, for example, if red and vascular before death, may become blanched afterward by the currents and counter-currents of this force (the endosmotic and exosmotic) whereby the serum, coloring matter, fibrin, &c., may be transported to other situations, leaving organs once red, now blanched, bloodless, and uninjected, especially if the post-mortem temperature be high. In robust subjects who have suddenly died in the streets from sun-stroke or apoplexy of the lungs, large effusions of blood will generally be found in the pleural cavities, deeply coloring the same, particularly if the dissection be delayed for five to twenty hours. The blood passes from the pulmonary parenchyma through the pleuræ without rupture, leaving the centres infiltrated with coagula.

The same thing occurs not unfrequently after death from acute fevers, particularly in cases in which the lungs had been congested during the disease.

**VITAL, MORBID, ENDOSMOTIC COLORATION AND OTHER CHANGES.**—Contiguous organs, particularly those of a membranous character, which contain fluids, possess strong endosmotic, or mechanical and chemical forces or attractions by which different liquids though separated by septa, pass from one cavity to the other, forming a complete interchange : or these fluids partially pass and re-pass these septa, forming new mixtures and effusions after death, giving the tissues new colorations.

During life, the vital forces or functions control or modify physical endosmosis. In the cadaver, before the complete extinguishment of the remains of vitality, the same conditions may obtain to some extent, great changes taking place, the causes of which cannot readily be explained. In one recently dead body, for example, the bile is soon transported from the gall-bladder into the adjacent organs, extensively diffusing itself along the spine in the sub-serous tissues, giving rise to yellow, green, or black discolorations ; while, in another dead body, similar changes occur more slowly or not at all under circumstances apparently the same. Pounds of blood, or serosity, or a mixture of both, are often found in the pleural sacks of the chest soon after death. This blood, sometimes fluid, sometimes coagulated, could not have been effused before death without having been attended with the characteristic symptoms of effusion. The lungs, the serous, and the sub-serous tissues, are thus often dyed with this liquid.

Professor Draper, of New York, in his beautiful and learned folio-work published in 1845, on the Forces which produce the organization of Plants, says : "If two liquids be placed on opposite sides of a porous septum, or at the opposite ends of a capillary tube, which is wetted by one more perfectly than by the other, that which exerts the most energetic action will flow fastest. If a piece of bladder be soaked in water and in alcohol, it will readily be seen that the former acts more powerfully on it, giving it greater flexibility and translucency, and having a stronger affinity for its tissues. For these reasons if a mixture of water and alcohol be tied up in a bladder, as is well known, the water will soak out and evaporate away, but the alcohol will be retained," 28

In dissecting the recently dead body, if blood vessels be opened, while, at the same time depressed portions of the serous membranes be divided, the blood rapidly infiltrates and extensively dyes the sub-serous tissue, simulating grave lesions, being, however, examples of the law of imbibition only.



Bichât, in his "Researches upon Life and Death," says truly, "the mucous membranes lose after death, that redness which characterized them during life; and they almost always assume dark, sombre hue, &c." The differences between the color in the living and even the most recently dead state, are often, doubtlessly very great. In the latter condition changes take place from various physical and chemical causes.—Hence, a colored engraving representing the morbid tints of an organ one hour after death, might differ materially from another of the same organ, 24 to 48 hours later. This variation and instability of color detracts much from the value of costly plates. The black color of the tissues, particularly of the capillaries of the pia mater, lungs, and indeed of all organs, is often removable by exposing the parts to the air, from which they acquire a red hue (oxydation). The black blood often left in the lungs at death is changed to a bright normal red, simply by inflating these organs, or exposing them to the air in dissection.

The color of the skin, it may be rationally supposed is to a great extent a type of the mucous membranes of the alimentary canal. The skin even before death in some instances becomes somewhat striped, mottled, or perhaps of a dark-red, or bluish appearance, chiefly upon lower or dependent portions of the body. This discoloration may greatly increase after death, and diffuse itself over the most elevated as well as the lowest portions of the body, insomuch that it becomes almost impossible, in some cases, at a few paces distant, to recognize the identity of the most familiar face. When this red, black, or it may be blue discoloration begins to recede from the higher portions of the body, as the forehead, tip of nose, &c., the recession proceeds almost as regularly as the falling or settling of water, showing a comparatively level line of subsidence along the sides of the body, the elevated portion becoming blanched *pari passu* with subsidence mentioned.

If the corpse be turned over upon its face, the paleness will quickly, sometimes almost instantaneously, be replaced by the original deep discoloration. By turning the body from time to time, the color will turn. With these external changes, it may safely be assumed internal changes of color must to some extent, take place from the law of gravity.—Were a hundred men brained on the field of battle, and laid out as is usual upon their backs for 20 to 40 hours before dissection, there would probably be found red discolorations in the cardiac portion of the stomach and in depressed portions of the bowels, &c., especially in hot weather. These discolorations, together with their accompanying *ramollissement* in depressed portions of the bowels and cardiac region of the stom-

ach, would afford a picture much resembling, if not identical with, a vast many cases which formerly passed for the famous "*gastro-entérite*" of M. Broussais.

Dr. Beaumont whose unrivalled opportunities of ocularly examining the healthy human stomach in St. Martin, says that the color of the mucous coat varies according to its emptiness or fulness. Dr. B. says, "when empty it is of a *pale pink color*—on the application of aliment the *color is brightened*." "If the mucous coat be wiped during chymification the membrane appears of a deep pink color at first—if wiped when empty a similar deepened color appears though in a less degree. It is sometimes *red* and *dry*, in fever, in overloading the stomach with food or spirits, &c. ; also in fear, anger, &c." (*Experiments, &c.*)

Many patients who rest for a considerable time upon the back before death, will have, both injection and deep discoloration in the posterior parts of the lungs. In a great number of cadavera, whatever may have been the position of the body before death, injection, or infiltration, and redness of the pulmonary and other tissues in dependent parts occur from the gravitation of the blood independent of disease, and, within a certain limit, the more so in cases wherein the dissection has been delayed for a considerable time.

The tissues of the human body become actually dyed with the coloring matter of the blood, bile, or black-vomit liquid in the vessels and organs, staining them just as coloring matters stain clothes. The later the dissection, within certain limits, the deeper will be these colors as a general rule : comparatively speaking the natural appearances of the viscera are phenomena rarely witnessed. How few have even seen a healthy human stomach, liver, spleen, small or large intestine ! Hence it must be difficult to appreciate morbid vascularity, injection, and color. Erysipelas, measles, and scarlatina, are striking alterations, because the healthy appearance of the skin is familiar to all, and so is the vascularity of the drunkard's eye, and that of ophthalmic inflammation, for the same reason. Hence among medical men there is perfect unity of opinion in relation to morbid vascularity of the eye, but not with respect to that of the stomach, or of the pia mater, or that of the spinal cord.

Non-vascularity or some similar term is desirable to express a morbid alteration which pathologists have little noticed in their ardor and too exclusive devotion to congestion, hyperæmia, inflammation, redness, &c.; paleness in scirrhus, in the blanched stomach in some cases of yellow and

other fevers, is another. A white, cord-like contraction of the intestine, is a third. White softening of the mucous, and white thickening of the serous tissues, are similar examples.

Vascularity, without injection, may consist with an anæmic condition of an organ, the vessels of which may be numerous yet empty and collapsed.

Dropsies often leave the serous membranes apparently anæmic and white. Glottidian œdema, with tumefaction and suppuration—thickening, opacity and increased tenacity of the arachnoid, are in the same category.

The space allowable in this Journal will not permit the introduction of practical illustrations of these desultory remarks, yet the following experiment being brief may be admissible.

1848, Oct. 2., Noon.—C. F., aged 21, dead (from yellow fever) six hours. Omitting the details of the post-mortem dissection (premising, however, that each pleural cavity of the chest contained half a pint of fluid blood) the following is the account of the exterior of the body, and of an experiment upon the large intestine :

Height, medium ; extremely muscular and robust ; muscles natural ; under the fasciæ of the limbs a thin stratum of bloody, fibrinous exudation ; fasciæ and fat yellow ; the latter abundantly developed ; skin and eyes yellow ; face mottled ; but little positional injection ; abdomen free from distention ; body warm ; but little rigidity ; blood thick, but not coagulable.

Eight pints of Mississippi or hydrant water colored with indigo, were injected per anum ; the rectum was secured in the site of the sphincter with a ligature. The contents of the large intestine, free from all solid matter were estimated at one pint, making nine pints. This quantity, with the contained gas completely, but moderately distended the entire organ to the ileo-cæcal valve, beyond which not a drop passed. In two hours the entire mucous tissue of the large intestine was completely dyed. After thoroughly washing the intestine, the color remained as before.

Although no part of the fluid had passed the valve of the cæcum, the mucous coat of the lower portion of the ileum had for several inches become faintly blue, the color increasing more and more towards the valve. The tissue did not appear to be infiltrated with liquid, but simply colored by capillary, or endosmotic action. In like manner the mucous tissue of the large intestine appeared to attract the coloring matter from the water, being exceedingly thin, well-defined and distinct.—



Had 8 pints of healthy blood been injected instead of the blue water, the mucous tissue would have been red, and, the most faithful artist would, in painting the same, give a most frightful example of inflammation or hyperæmia, which might mislead the pathologist.

CONTRACTION AND DILATATION OF THE HOLLOW ORGANS.—The natural state of the colon, not to name other examples, is distention, by means of gas when nothing more solid is present ; the natural state of the urinary bladder when no urine is present is contraction. When the large intestine is contracted, as it often is, (at least in fevers of New Orleans) into a firm, white, bloodless, round cord, its cavity being virtually obliterated, this peculiar and hitherto unrecognized condition should be regarded as a lesion as well as intus-susception, or hernia ; but it is far different when an empty urinary bladder is found contracted into an almost solid globe without any other alteration. Yet Dr. Baillie, the father of British Morbid Anatomy, at the time he wrote (1797) appeared to regard this condition as a lesion. He says : "*Urinary Bladder Contracted.* The bladder is also found contracted to such a degree as hardly to have any cavity. This is sometimes not to be considered as a disease, but simply as having arisen from a very strong action of the muscular coat of the bladder previously to death."\*

Contraction of the stomach when empty is with rare exceptions natural ; as a consequence of this contraction, the rugosities and the rough slightly elevated points have been regarded as a lesion, sometimes called mammillation of the mucous tissue ; these are numerous and salient in stomachs quite healthy, yet, some very intelligent men pronounce them morbid.

(*To be Continued.*)

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ART. V.—*Transcendental Medicine.* By BENNET DOWLER, M. D.

ALTHOUGH the paramount aim of this Journal is, and has been, of a practical character, yet the Editor has reason to believe that its speculative articles have interested, at least, a portion of its readers. Those who prefer the history of cases, modes of treatment, prescriptions, and post-mortem examinations, will see that these fundamental topics are not neglected, and may, therefore, charitably concede an occasional page to another class of readers, who take a deep interest in the speculative and metaphysical departments of medicine. All science is essentially metaphysical in its nature, or in its processes, or in its subjective and object-

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\* Morbid Anat, 253, Lond. 1833. Edited by Mr. Wardrop.

ive relations. Metaphysics is the science of the sciences—*scientia scientiarum*, seeing that it comprehends the instrument of knowledge, that is the understanding and the intuitions peculiar to itself, the routes of knowledge lying through the senses, the Idea and the Fact and the Method and the Natural connection and the Deduction, and even the Application of the Rule in Practice—all of which have an Abstract aspect. Concrete or rugged Matter itself is best scrutinized and generalized by means of the fundamental principles of metaphysical science.

In the English language, however, the term metaphysics is generally synonymous with psychology, the theory and laws of our mental frame, or it is applied to such abstract speculations as appear to be the most visionary and absurd.

The Rev. Sidney Smith, in commencing a course of lectures on this subject, has the following witty exordium: "There is a word of dire sound and horrible import which I would fain have kept concealed if I possibly could; but as this is not feasible, I shall meet the danger at once, and get out of it as well as I can. The word to which I allude is that very tremendous one of *Metaphysics*; which, in a lecture, is likely to produce as much alarm as a cry of fire in a crowded play-house, when Belvidera is left to weep by herself, and every one saves himself in the best manner he can. I must beg my audience, however, to sit quiet, till they hear what can be said in defence of Metaphysics, and in the mean time to make use of the language which the manager would probably adopt on such an occasion,—I can assure you ladies and gentlemen, there is not the smallest degree of danger."

Transcendentalism, to which the reader's attention will be drawn, is only one branch of Metaphysics; the latter rather than the former, comprehends the subjective laws of the mind, and of the senses, and their laws of relation to the objective or material world.

If transcendental metaphysics be admissible in any case, (of which more hereafter) then it may be admissible in medicine, particularly in physiology and pathology. Those who disallow the possibility of transcendental knowledge, may readily perceive that it is virtually implied in the speculations, principles, and theories of both the experimentalists and rationalists. It exists, whether rightfully or wrongfully,—which, apart from other cogent reasons, justifies the attempt to appreciate its validity and uses critically.

"Is a system of philosophy," asks Coleridge, "as different from mere history and historic classification possible? If possible, what are its necessary conditions? I was for a while disposed to answer the first

question in the negative, and to admit that the sole practicable employment for the human mind was to observe, to collect, and to classify. But I soon felt, that human nature itself fought up against this wilful resignation of intellect ; and as soon as I did find, that the scheme, taken with all its consequences and cleared of all inconsistencies, was not less impracticable than contra-natural. Assume in its full extent the position, *nihil in intellectu quod non prius in sensu*, assume it without Leibnitz's qualifying *prater ipsum intellectum*, and in the same sense, in which the position was understood by Hartley and Condillac ; and then what Hume had demonstratively deduced from this concession concerning cause and effect, will apply with equal and crushing force to all the other eleven catagorical forms, (quantity, quality, &c.,) and the logical functions corresponding to them. How can we make bricks without straw ?—or build without cement? We learn things indeed by the *occasion* of experience, but the very facts so learned force us inward on the antecedents, that must be pre-supposed in order to render experience itself possible." Coleridge. *Biographia Literaria*. I. 142-3.

Mr. Semple (Edin.) translator of Kant's *Metaphysics of Ethics*, says, "Finding that the phenomena of the mind could not be explained upon the inductive method, Kant established a new postulate, which he advanced as the basis and ground-work whereon his whole system rested ; and this fundamental proposition, if admitted, is sufficient to carry us through every stage of the argument. It is a principle pervading the most remote and apparently detached parts of this system, and gives coherence to every link in the chain of reasoning. This mighty postulate is——"

"What truth soever is necessary, and of universal extent, is derived to the mind from its own operation, and does not rest on observation and experience, as, conversely, what truth or perception is present to the mind, with a consciousness, not of its necessity, but of its contingency, is ascribable not to the original agency of the mind itself, but derives its origin from observation and experience."

Among the Germans, metaphysics is to a great degree synonymous with the transcendental or super-sensuous philosophy including truths proper to the understanding itself, yet not demonstrable by the experimental philosophy. It includes, also, conjectures, and probabilities, belong to the same super-sensuous category, all of which, however, must be clearly conceivable as being among possibilities and devoid of absurdities, though not as yet reduced within the limits of experimental evi-



dence. Many truths which formerly appeared to lie beyond the range of experience have been established by the experimental school.

Transcendental truth is known by two invariable characteristics which pure experiment cannot boast of in any case, namely, necessity and universality. Two examples will suffice to prove this. 1. Duration is eternal.—“Eternity is the perfect non-existence and negation of all time—an absolute opposition,” and, for the plain reason that infinite duration is not composed of parts. A truth but not experimentally proved, this is. 2. Space is infinite. These propositions which cannot be established experimentally are self-evident, must be true. They possess both criteria, namely, necessity and universality. Their opposites cannot be thought of as possibilities. These would remain though all matter, all phenomena were annihilated. The experimental philosophy has not yet eliminated one truth which is intuitively known to possess both necessity and universality, so that its antithesis, negation, modification or annihilation, would be either wholly inconceivable or impossible. Physics can boast of one law which towers immeasurably above others in universality, that is gravitation. Yet the nature of this positive force is transcendental, its phenomenal history, alone being known. Neither the necessity nor the universality of gravitation amounts to an intuitive truth the opposite of which cannot be conceived as possible. All the matter of the solar system as far as known is under the influence of this law, beyond which, its validity cannot be ascertained; its modification or extinction, together with the solar system in which it rules, may, or may not occur. Its universality and necessity cannot be affirmed in the sense of intuitive truth, as in the case of boundless space, and eternal duration.

Pathological dynamism, or that morbid force in the organism, the effects of which are symptoms, or material phenomena, the cause of the laws of motion, is a transcendental idea, or principle.

Force, which is the soul of physics and of physiology, perhaps vitality itself, is ideal or abstract. Nevertheless, it appears eminently real, judging from its phenomenal history, whether that be taken from the stellar heavens, or from the most tiny microscopic animal.

While pathological forces are to be viewed as a probability, or at least as a possibility, many who do not admit even this much, nevertheless, think, talk, write and act precisely as if such morbid forces actually existed. The non-recognition of this doctrine in a theory or word, does not invalidate its virtual existence as a fact, nor the necessity of

treating it in a practical point of view whether well or ill-founded. Transcendental Dynamism is, therefore, virtually a fact as much as experimentalism itself, as already stated.

It is not intended, however, to argue, at length, the question with a view of deciding whether it is, or is not possible in medical science to arrive at any theoretical, *à priori*, or synthetic truth lying beyond the narrow sphere of the experimenter; whether all truth must be the gift of the latter? whether the understanding has any inherent or intuitive power of knowing that which is transcendental or above, not contrary to anything certainly known by experiment.

The vital principle or force, though never yet isolated by experiment, is a transcendental truth, or, if you will, a hypothesis, which pervades both psychology, physiology, and pathology. Physicists who declaim against it as a night-mare, illusion, or phantom, offer certain crude elements of matter chemically combined, or anatomically arranged, which they call the-all of science, that is, the entirety of thought, sensation, force, &c., life itself. This theory they assume to be a complete explanation, nay, annihilation of vitalism, to be taken on trust!—an *ipse dixit* or *petitio principii*, rather than a physical definition, which, as Whately says in his Logic, “must lay down *the parts of the essence* which are actually separable. Thus a plant would be defined *physically*, by enumerating the leaves, stalks, roots, &c.”

Count Bournon, Dr. Whewell says, upon the subject of crystallography, “published a work on a single mineral (calcspar) in three quarto volumes, giving representations of 700 forms of crystals”---yet none of these are the same as Shakspeare’s thoughts, or Macready’s acting; neither can the anterior roots of the spinal nerves, nor that fanciful organ of the brain, called combativeness, be shown on physical principles to have been the essential cause of the late war in the East, including the muscular motion in arms against muscular motion.

Professors Agassiz and Gould, in their work on “The Principles of Zoölogy,” say: “Besides the material substance of which the body is constructed, there is also an immaterial principle, which though it eludes detection, is none the less real, and to which we are constantly obliged to recur in considering the phenomena of life. It originates with the body, and is developed with it, while yet it is totally apart from it. The study of this inscrutable principle belongs to one of the highest branches of philosophy. The *constancy of species* is a phenomenon depending on the immaterial nature.” 67.

"An organized product of nature," says Kant, "is that in which all the parts are mutually ends and means." Now this much admired definition, certain physiologists could not accept, maintaining as they do, that reason is incompetent to decide whether Nature had any end or intentionality at all? Whether she accomplishes her ends by the fewest and best means and by the shortest route possible? Dr. Whewell affirms that "it is a test of true theories not only to account for, but to predict phenomena."

There is much difficulty in apprehending the ancient philosophers (among whom Aristotle was the greatest) in regard to their metaphysical explanations of psychological, physiological, and physical causes, forces, and laws. Perhaps they did not always understand themselves. While the sounding line of Kant reaches as deep as theirs, the stream of his knowledge is clearer.

Aristotle classifies causes thus: "*Material*, of which things are made; *Formal*, by which a thing is that which it is, and nothing else; *Efficient*, by the agency of which any thing is produced, and *Final*, or the end for which it is produced. "The First Cause of Motion is itself unmoved—is that substance which is the cause of eternal motion, simple, pure energy, void of matter, eternal, immutable—different from that of corporeal substances; indivisible, because unity is perfect; immutable, because nothing can change itself; and eternal, because motion itself is eternal. This power is an incorporeal intelligence; happy in the contemplation of himself; the first cause of all motion, and in fine, the Being of beings, or God. Animal life arises from the union of the nutritive soul with animal heat. Life is the continuance of this union, death its dissolution. (*De Vita et Morte*. C. 17, 18)." (Enfield's Hist. Philos. 159, 161, 164.)

The fundamental principles of the Stoics concerning Nature, physical, psychical, and physiological, are thus summed up:

"The universe though one whole, contains two principles, distinct from elements, one passive, the other active. The passive principle is pure matter without qualities; the active principle is reason, or God—principles so essentially united, that their nature is one and the same—both are corporeal. The efficient cause, or God, is pure ether or fire, and comprehends all the vital principles by which individual beings are necessarily produced. Matter or the passive principle, is destitute of all qualities, but ready to receive any form." (*Ib.* 189, 190-1.)



Transcendental speculation is often the anticipation or precursor of discovery, which at length, experience verifies and applies. Thus losing its former apparently transcendental character, it falls into the experimental ranks. Transcendental and philosophical anatomy has proved of great value as a working theory.

Thus Oken, Owen, and many others, have formed ideal or archetypal skeletons, &c., in anatomy, and not without advantage to science. The same may be said of the theory of Analogues or analogical unity, which assumes that an organic function found in any animal has in every other a similar organ and function, under some, perhaps a different form. The theory of homologies which sets out with the supposition of indentities with differentiations of structure and functions in various animals, is another example.

Transcendental medicine consists in the proper application of the understanding or reason in relation to truths, or probabilities, or hypotheses, which rise above direct experience. The practical man can neither think nor talk on many topics of science without expressing or implying speculative views.

A passage taken from Vol. II., p. 146, of this Journal, written by a distinguished man, will show how difficult it is to write even from direct experience, without virtually admitting something beyond it, though disclaiming such intentionality.

The late Professor Harrison, in his paper on yellow fever, says, "With respect to the lesions found after death, they are evidently the consequences of the disease. \* \* \* I regard the lesions in the stomach and intestinal canal, therefore, as I do the yellowness of the skin, the injection of the eyes, etc., not as the causes or other symptoms, but as effects. They are all but so many different results of the morbid actions to which the system has been subjected; and he who attributes the appalling train of morbid phenomena which characterize this disease to the lesions he finds after death, judges, it seems to me, about as wisely as he who should attribute the conflagration of his dwelling to the ashes which he finds in its place."

This quotation is made, not with a view to the unqualified adoption of its conclusion, but to show that among the acutest intellects there is very generally a continual reference to transcendentalism, even though it may be disavowed.

Here, it will be seen that neither the materializing symptoms during life nor the lesions found after death, are accepted as *the dis-*

case itself; nor will the writer allow the disease to be an entity. Viewed synthetically, the group of symptoms and lesions would be called the effects of known or unknown antecedents—viewed analytically, the *symptoms* are the *disease itself*.

Disease reveals the symptoms—symptoms disease! How paradoxical! Ascend to the ultimate symptoms! These are not the disease, but the effects of more remote antecedents. You pass the boundary of the senses to join in the witches' dance on the Hartz mountains:

“The limits of the sphere of dream,  
The bounds of true and false are past;  
Lead us on thou wandering Gleam—  
Lead us onward far and fast,”  
“For nothing is,  
But what is not.”

In some of the ablest works upon Forensic Medicine, insanity is called a disease of the soul—not a disease of the body. Here the explanation or reference is wholly transcendental, seeing that neither the independent existence of the soul nor its separate maladies, have yet been demonstrated by experiment in the bodied or disembodied form. “A spirit hath not flesh and bones.” What its maladies are in this naked state “must give us pause.”

Matter itself is viewed transcendently by even the rigid materialist. Of the essence or substantiality of matter, he has no knowledge, no proof. He diagnoses matter by its symptoms, if the phrase be allowed. He dwells upon its extension, ponderosity, density, divisibility, figure, color, and the like. But is the whole existence of matter merely *qualitative*? Has it no *quantitative* or substantive essence?

The transcendental idea of Force as a positive or substantive essence, as being more than a mere quality of matter like figure or color, flashes ever and anon from the grim realm of materialism itself;

“It lives through all life, extends through all extent,  
Spreads undivided, operates unspent,”

regulating the planetary orbs which spin through infinite space.

It is, however, in physiology that transcendentalism has been most used,—most abused. Apart from this consideration, physiological speculations, are no less interesting than physiological experiments. Among the former the theory of sensation is the most important.

The great working principle of the modern school of sensationalism was clearly put, (not followed) by Aristotle: *Nihil est in intellectu quod non prius fuerit in sensu*. Dr. Renouard observes, in regard to this axiom that, “it was reserved for the greatest naturalist of antiquity to

lay the first philosophic basis of empiricism [experimentalism] in emitting this famous axiom—‘*all ideas come from* [through] *the senses*’—which became, two thousand years later, the germ of a scientific revolution! \* \* \* \* He afterward separated himself from the doctrine, and established a method directly opposite.”

The axiom that nothing is in the mind but what came first through the senses, does not comprehend the fundamental question—Did the mind with its faculties, as understanding, &c., first pass through the senses? Certainly not.

The Aristotelian theory of sensation, though transcendental, and, withal erroneous, is the basis of the present system of physiology, though vastly more preposterous is the latter which asserts that there are four separate and distinct sets of nerves upon which as many kinds of impressions run like locomotives to and from the sensorial spot in the brain—to and from “the *true* spinal cord.”

Dr. Reid, who was profoundly versed in the Aristotelian physiology, gives the following summary of the Peripatetic System, which is worthy of the careful perusal of students before adopting the assumptions of modern physiology concerning muscular motion and sensation.

*The Peripatetic System* :—“ 1. That images, species, or forms of external objects, *come from the object*, and enter by the avenues of the senses to the mind. 2. That the external object itself is not perceived, but only the species or image of it in the mind. It is a philosophical opinion; for the vulgar undoubtedly believe that it is the external object which we immediately perceive, and not a representative image of it only.

“The unlearned man says, I perceive the external object, and I perceive it to exist. Nothing can be more absurd than to doubt it. The Peripatetic says, what I perceive is the very identical form of the object, which came immediately from the object, and makes an impression upon my mind, as a seal does upon wax. But what says the Cartesian? I perceive not, says he, the external object itself. So far he agrees with the Peripatetic, and differs from the unlearned man. But I perceive an image, or form, or idea in my own mind or in my brain.

Dr. Robert Hook makes ideas to be material substances. The soul, he thinks, may fabricate some hundreds in a day, and that as they are formed, they are pushed farther off from the centre of the brain where the soul resides. By this means they make a continued chain, coiled up in the brain, the first end of which is farthest removed from the centre or seat of the soul; and the other end is always at the centre,



being the last idea formed, which is always present the moment when considered : and therefore, according as there is a greater number of ideas between the present sensation or thought in the centre and any other, the soul is apprehensive of a larger portion of time interposed.

“The vulgar give the name of perception to that immediate knowledge of external objects which we have by means of our external senses. How improbable it may seem that philosophers, who have taken pains to study the operations of their own minds, should express themselves less properly, and less distinctly than the vulgar, it seems really to be the case ; and the only account that can be given of this strange phenomenon, I take to be this : the vulgar seek no theory to account for the operations of their minds ; they know that they see, hear, &c. ; those who think distinctly will express these operations distinctly, as their consciousness represents them to their mind. But philosophers think they ought to know not only that there are such operations, but how they are performed ; and having invented a theory to explain these operations, by ideas or images in the mind, they suit their expressions to their theory ; and as a false comment throws a cloud upon the text, so a false theory darkens the phenomena which it attempts to explain.

“ Ideas, according to Bishop Berkeley, are passive, inert, unthinking beings—real things.”

“ Aristotle makes every sensation to be the form, without the matter, of the thing perceived by it, as the impression of the seal upon wax, so our sensations are impressions on the mind bearing the likeness or form of the external thing perceived, without the matter of it.” (Reid’s *Essays*.)

It will be seen how modern physiologists have multiplied the mysteries of Aristotle, both as to the number of impressions, and the number of routes, which they travel.

Perception, or the being aware of a thing, or a truth, originates from objective or from subjective nature, that is to say, from what is not the mind, or from what is. In other words, perception is either an operation of the mind itself, or it is produced from the outward nature, by or through the senses. All human knowledge, therefore, originates from one or from both of these sources. Whatever is called perception, reason, intuition, or consciousness, or the like, is subjective knowledge ; on the other hand, all that is called knowledge from observation and experiment, being transmitted through the senses, is objective or derived from without, as already stated.

Perception, whether excited from within or without, can have no validity independently of consciousness. Its very essence implies its being known. The distinction made by physiologists and psychologists between perception and sensation is gratuitous—indeed self-contradictory, as when they assert that a sensation is not perceived,—for what sensation soever is not perceived is not. It is essential to sensation that it be felt, or perceived, whether it originate from a purely intellectual or a purely sensuous source.

The fundamental faculties of the mind, as understanding, will, &c. though primary, and not created by external sensuous impressions, are fertilized, developed and matured in the sensuous school. When thus matured, the understanding in virtue of its own inherent capacity and intuitive energy, deduces certain fundamental truths, as already adverted to in this paper, and which need not be repeated, as the remaining space in the *Journal* will only allow of a hurried glance into the natural history of sensation.

Sensation, like matter, mind, space, duration, cause, thought, will and the like, is undefinable, inexplicable, and incapable of being proved; because, being of all truths the most self-evident, there remains no other evidence so clear as that inherent in itself. Consciousness cannot appeal to another higher and more enlightened faculty whereby to determine its own validity. It is its own first, middle, last, law and judge.

Although sensation cannot be defined logically, yet it is readily comprehended by its own light or consciousness. If an individual could be found who had never felt a sensation, it would probably be impossible to convey to his mind any conception concerning it at all. One of the most remarkable facts in the whole circle of science, is that which consists in making the subjective objective to itself, the mind itself being the object of notice and research by the mind, subject and object in unity, the centre in which all the lines of knowledge meet. These views belong, however, to speculative science, rather than to physiology.

The question still remains, what is the physiological history of sensation? It is conceived that a short description, with fundamental illustrations, will make the whole matter more or less intelligible, without resorting to the prevailing hypotheses of the day.

- Sensation is that conscious, or felt relation which obtains between the subjective and objective elements of nature: this felt relation requires, according to circumstances, sundry essential conditions: this felt relation is self-evident, and is not cognized by means of an intermediate entity or attribute called an idea, or a transmitted impression; in a word,

this relation is based on *immediacy*, not on intermediary representationism. When I hear the report of a cannon, I do not hear the idea, or a transmitted impression of the report, but the report itself; the felt relation between the cannon and the Me, is hearing. I smell a rose, not the impression of a rose. I taste an orange, not the impression of an orange. I see a man crossing the street, not a man crossing my sensorium; I see him there, not an intermediate entity in my mind, called a transmitted impression of a man.

There is no evidence whatever to show that the subjective and objective require contact by means of an intermediate entity, idea or impression, other than the primary impression, in order to be sensationalized.

The immediacy of sensation is as self-evident as the reality of sensation; whereas, the present system of physiology assigns the whole process of sensational cognition to representation, intermediary causes, wholly fictitious, called, not ideas, as Aristotle called them, but transmitted impressions.

The present system of physiology, (independently of the reflex system,) has opened a road from the subjective to the objective, or rather from the latter to the former, not by means of Aristotle's refined films, phantasms or ideas, but by means of two sets of nerves, and two sets of impressions, which are not only entities, but material ones. It is not sufficient that the sensiferous nerve shall receive an impression, but there must be another material impression, which travels along a material route, the sensiferous nerve, to a central, material sensorium, on which the final impression is made. That an impression can make a second impression without its seal, without being seen, too, on the passage, or after its arrival, and without leaving any visible mark, is wholly incomprehensible. This theory assumes that the sensiferous nerves have no sensibility whatever, being mere conductors of impressions. These transmitted impressions cannot be metaphors, nor yet immaterial entities, since there is no known analogy, of the remotest kind, in all nature, showing that metaphors or immaterial impressions travel along material roads, whether constructed of soft cords or hard iron. No one can appeal to consciousness as evidence that there is a particular spot in the brain which is the exclusive seat of sensation; no one is conscious of travelling impressions, while every one has the evidence of intuition that impressions are felt at the part impressed, with rare exceptions.

All candid anatomists must admit that the motiferous and sensiferous nerves can no where be actually distinguished. The present representational system of physiology expresses or implies four sets of impressions,



two for the sensori-volitional, and two for the excito-motory nerves.—The impressions of the former begin in the sensorial spot, travel along a special track, and impress special motory organs. The reflex system has an entirely different set of impressions that do not go to, nor return from, the central sensorium in the encephalon, which impressions are said to be “physical in their nature, reflex in their actions.” Here we have at least four kinds of impressions, all claiming to be physical, all traveling along physical roads, and yet all unknown, all incomprehensible except the first, the only true one.

This doctrine of representational knowledge, banished from the speculative and psychological sciences, has found an asylum in physiology, under the name of transmitted impressions, so that Aristotle himself would not recognize his original films. All these difficulties are avoided, by admitting the intuitive evidence of consciousness, namely, that the relations between the subjective, or the Me, and the objective, the Not Me called sensations or feelings are direct and immediate, as they seem to be without the intervention of any third entity, called an idea, or transmitted impression, which must first reach an unknown spot in the brain, before perception or sensational cognition can take place. The sensation referred to the eye, ear, tongue, nose or skin, have their seat in those organs, and not exclusively in a spot in the brain. To say that the special organs of sense, and the periphery of the body, are mere conductors, having no sensibility whatever, flatly contradicts universal experience. The true vocation of physiology, in this department of science, is to ascertain and fix the essential conditions and laws of sensation without attempting to substitute representational fictions for intuitive principles.

Anatomists without the least hesitancy assert that conducting nerves exist which however they cannot demonstrate. Along these nerves, or those tracts, sensitive impressions, motor impressions, volitions, &c. travel to and fro, ascend, descend, or stop. The impressions must be material as much as the nerves. Lo! It is now announced that “there are two kinds of sensitive nerves! the ascending and descending!” More! “The division of the sensitive columns so far from abolishing their sensibility increases it, &c.”

The solemn affirmation of the existence of four separate and distinct nerves which have not any physical or anatomical reality whatever except in books, plates, lectures and theories—the positive assertion that there are four intermediary entities or impressions, are not only wholly fanciful, but they cannot claim the merit of being even transcendental probabili-

ties, because they are not conceivable as possibilities in, at least, one fundamental point of view, with regard to the restriction of sensation to an unknown spot in the brain, called the sensorium, the residue of the nervous system being in nowise endowed with sensation, but serving merely as insensible conductors. Were the four kinds of unknown nerves and four kinds of unknown impressions together with the unknown sensorial spot fully demonstrated as anatomical facts, they could not destroy the intuitive, and therefore, paramount conviction that the hand, the foot, the whole surface where the peripheral expansion of the nerves prevail, *feel*. There is no appeal from intuition. It is final. It is consciousness itself intensified. The firmest believers in this system when not engaged in polemics, lectures, or book-making, ignore these assumptions altogether. No belief—no physiological belief, which is directly contradicted by intuition and common sense can have a practical effect upon conduct, nor even upon language, when one speaks naturally without the affectation or bias of theory.

Tread on the corns of the most impassioned teacher, in the midst of his discourse while fully possessed with the demon of his theory, and he will exclaim—you hurt my corns! forgetting his sensorial spot altogether. In medicine as in the common affairs of life, belief is best tested practically. In is self-evident that the part hurt is the part pained, though the intensity may vary, whether it be the brain, or the skin.—No one out of the lecture room ever suspected that he had a spot in the brain, which, alone, had any feeling. Were this true, it would be self-evident to all sentient human beings, since it could not be known by anatomy, but by an intuitive consciousness alone.

That the sensation is diffused, though not equally, both centrally, and circumferentially, is not only a positive intuition, but its claim to be exclusively fixed in a spot in the brain has been disproved experimentally, decapitated animals having afforded for hours the most satisfactory evidence of pain, purpose, intentionality, contrivance and voluntary muscular motion.

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ART. VI.—*Æsthetical and Medical Reflections upon the Popularization of Anatomy and Physiology in the United States; with observations upon the Signs of the Times.* By BENNET DOWLER, M. D., New Orleans.

THE recent appearance of a work on Physiology by the distinguished

Professor Draper,\* who boldly claims for his book acceptance on the part of the non-professional world, affords a fit occasion for the expression of an opinion long entertained in regard to the utility of such works. Some of the school directors in New Orleans, distrusting the propriety of anatomy and physiology in schools and families, have urged the necessity of publicly opposing these threatened innovations in education, and equivocal experiments in æsthetics.

A number of Anatomies and Physiologies designed expressly for the schools, parlors, every body and of all the genders, have recently been published, mostly by *Professors in Medical Colleges* whose abilities are of a high order, and whose equivocal attitude towards legitimate medicine, and the well-being of society, though masked, is not the less worthy of scrutiny for that reason. Not satisfied with the honors and emoluments of office, and the applause of their pupils and patients, they seek to shine in the school-room, and in the saloons and fashionable circles, everywhere. A vaulting ambition which seeks to inaugurate anatomy and physiology on the same popular platform with the Fine Arts, the science of the Beautiful, sculpture, painting, music—may be rewarded with the plaudits of incompetent patrons and judges beyond the pale of the profession.

It was Antisthenes, an Athenian philosopher who, having been informed that a bad man, incompetent to judge of merit, had been praising him, replied,—“What foolish thing have I been doing?”

Dr. Draper's programme and purpose will be given in another part of this paper, in his own words. In the meantime, it may be proper to glance at the prelusory arrangements intended to usher the “physiology” at once into the presence of the sovereign people, brilliant auditories, readers of a popular Magazine which circulates to the number of “168,000,” while the 40 Medical Magazines more or less, in the country do not, perhaps, reach 500 readers outside of the profession.

Dr. Draper, it may be thought, is in no way answerable for the popular uses to which his publishers may put his physiology, had he not in the work itself expressly set forth in his preface, his purpose of addressing the non-professional public, strongly advocating the study of this science as a part of *public education in America*.

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\*HUMAN PHYSIOLOGY, Statical and Dynamical : or, the Conditions and Course of the Life of Man. By JOHN WILLIAM DRAPER, M. D., LL. D., Professor of Chemistry and Physiology in the University of New York. Illustrated by nearly 300 fine Wood-cuts from Photographs. Pp. 650. 8vo. New York ; Harper & Brothers, 1856.



The Magazine in its æsthetic experiment does not transcend the programme announced in Dr. Draper's preface to his physiology, and is now only referred to because its sanction or position, if well taken, and in harmony with the public taste, is more significant of the approaching popular anatomico-physiological æra, than anything that can be inferred from the medical Journals in this behalf. If the arrow shot, be against a strong wind it falls quickly.

In the Magazine 26 beautiful figures from Dr. Draper's work are introduced, with the following commentaries :

"These representations are taken from the stomach and intestines.—All young ladies, Miss Hiawatha, have a stomach and intestine, though they would never infer so from what they've been taught at the French boarding-school." "A stomach and intestine" is a phrase delicately put. A late distinguished Professor of anatomy who died in New York, in his lectures on anatomy, called the intestines, the *guts*, which is shorter than the entrails, bowels, or "the intestine" of the young lady aforesaid, whose duodenum, jejunum, ileum, cæcum, colon, and rectum, not to mention the tiny gut, the appendicula vermiformis, a worm-like offshoot from the Cæcum or blind gut, will measure on an average 35 feet in their longitudinal axis from the pylorus to the anus, or *vice versa*.

Tristram Shandy has not omitted this branch of education—"the intestine." "I beseech you, Doctor Slop, quoth my uncle Toby, interrupting him as he mentioned the *blind gut*, in a discourse with my father the night my mother was brought to bed of me,—I beseech you, quoth my uncle Toby, to tell me which is the blind gut ; for, old as I am, I vow I do not know to this day where it lies.

"—— The *blind gut*, answered Doctor Slop, lies betwixt the *liver* and *colon*. —— In man ? said my father. —— 'Tis precisely the same, cried Doctor Slop, in a woman. —— That's more than I know, quoth my father."

If the Professors of "the French boarding-schools" ignore the intestines, the question arises, whence the difference between French human nature, and American human nature ?

The October number of the aforesaid Magazine in an announcement of two columns defines the *status* of this book, in accordance with Dr. Draper's programme thus :

"This work, as its title sets forth, is a publication of the Lectures on Physiology which have been given for many years in the University of New York by the author, and is intended not only for the Medical Profession, but also for the general reader.

"Its aim is, by presenting the chief doctrines and facts of Physiology in a readable form, to contribute to the diffusion of that science among the people.

"The teacher of Physiology and the medical student will find in it a text book, in which the subjects are arranged and treated of in a manner which an experience of many years has shown to be adapted to these purposes. The aim of the author has been to constitute his book in this respect a practical work, which, within a moderate compass, by the aid of good illustrations, may meet the wants of those engaged in teaching or studying the science."

Physiology "for the people, and for the medical profession ! for the general reader, and for the teacher of physiology and the medical student !"—a Janus-faced physiology truly ! In "*still harping*" on the Magazine aforesaid there is no wish to trench upon its fair and flowery and golden Eden from which medical Journalism has been hitherto separated by "a great gulf," on the contrary, this periodical is referred to as one of the signs of the times,—one of the precursors of the anatomico-physiological æra, which the horoscope indicateth.

There is another class of Magazines—that is, popularized medical Journals which being intended also for the people and the profession has not altogether the same importance or significance as the text-books which Professors in medical colleges have sent on the same mission, as if the learner of the alphabet should be put through Astronomy while learning A—Philosophy, after P—Greek going with G—Rhetoric with R.

Popularized medical Journals restricted to hygiene and the plainest subjects, which do not profess to teach, or imply a knowledge of the difficult subjects of anatomy, physiology and pathology, may be worthy of support, though they never seem to have been supported by the people whose interests they were intended to subserve. Some of these Journals have been judiciously conducted. They made no experiments of doubtful import upon the public taste. They affected neither popular anatomies nor fashionable physiologies. They wisely restricted themselves chiefly to hygiene, sanitary measures, the art and science of preserving health—subjects as plain as soap and water, cleanliness and filth, pure air and foul, exercise, diet, etc., nevertheless, these Journals, rejected by the public, languished for a brief period and died. Whether the present Journals of this class (if such there be) now that they are reinforced by literary and fashionable Magazines having a million of readers (it may be,) every month will fare better in their more ambitious

aims to popularize the most difficult branches of medical science, remains to be proved.

Waiving æsthetical questions, admitting that these movements are devoid of treachery to legitimate medicine and charlatanism *per se*, the true issue presents itself, can the public, "the general reader" acquire and apply these sciences so as to be of utility, and promote the well-being of society "in America"—in progressive America! where table-turning, spiritual knocking, are seen and heard—where numerous periodicals derive literary contributions from "the spirit-lands" of eternity by disembodied ghosts—where there are female intending Congressmen—where there are Female Medical Colleges endowed by the legislatures and by benevolent individuals.

Female medical colleges, however, stand on a high and noble platform not affiliated with charlatanism, but seek science where alone it can be found, in the anatomical, surgical, and clinical amphitheatres and wards, fearless of blood, brains, generative organs, knives, saws, chisels, amputations, castrations, &c.

It remains to be proved, however, whether this innovation upon the inexorable Taste or æsthetic ideas of a high civilization in all times and in all places, Jewish, Pagan, Mahometan, and Christian, can be sustained, how rational soever it may be intrinsically.

In Goethe's *Wilhelm*, a lady exclaims—"He did as all men do,—he mocked at a learned woman; yet he kept continually instructing me."—"Goethe says,—"*Woman is the only vase into which we moderns can pour our ideality; nothing can be done with the men.*" The delineation of the female Ideal in modern civilization is adverse to the rugged Prose of anatomists, surgeons, and doctors. At all events, the respectable and benevolent corporators of "*The Female Medical College of Pennsylvania*," in their "seventh annual announcement" of that institution for 1856-7, exaggerate a little in claiming *superiority for Females over Males in the medical profession*. They say, that "*They find the demand for female Physicians wide-spread and increasing, and regard the study and practice of medicine as peculiarly adapted to the nice perceptions of woman, and the tenderness and refined graces of her nature.*" (Page 15.) Here, too, is another sign of the times.

This "*peculiar adaptation of females for the study and practice of medicine*" has no foundation in past history and must therefore be referred to an uncertain future. Historically speaking, that sex has never yet, in a single instance, given proof of the highest order of genius, in either



the Fine Arts, or the profound sciences. In sculpture, painting, music, fiction, poetry, prose, the drama, metaphysics, mechanics, chemistry, astronomy, natural history, anatomy, physiology, and practical medicine—in discovery and in intellectual powers of generalization, they stand upon a lower level than men of genius, notwithstanding the American deference shown to them in omnibuses, cars, saloons, and public assemblies. At most, the doctors of “the Female college” should, at present, claim nothing more than equality with their brethren in Æsculapius.

The public may gratify the morbid curiosity of an hour by the perusal of books on physiology. But if it be intended to put the general reader upon a course of study with any hope of success, the essential portion of his or her task should not be omitted. Oken says, “all animals are but foetal forms of man. *The entire animal organism is founded upon the sexual system.*”

Until recently the word physiology was defined (by Walker and others) agreeably to its literal meaning, *a discourse upon nature* (from ΦΥΣΙΣ, nature and ΛΟΓΟΣ, a discourse;) whereas, human physiology, if named after its most fundamental principle would be called human generation. Any of the following Greek words would be more appropriate or suggestive than the accepted term: ΓΕΝΕΣΙΣ, *genesis, generation, origin, creation, birth, descent, race, organs of generation*; ΓΙΝΟΜΑΙ, *to beget, or be born*; ΓΕΝΟΣ, *race, sex, kind*; ΓΟΝΟΣ, *that which is begotten, offspring.*

The Book of Generation or physiology, must be chiefly founded upon and studied with reference to, the anatomy and functions of the reproductive organs, and the origin, natural history, and development of their joint products or offspring.

Seeing that Professor Draper addresses himself to the people—which is the usual course pursued by individuals less distinguished, (called quacks) how can he justify himself before the scientific world, in an almost entire suppression of the fundamental portion of physiology, namely, the physiology and the physiological anatomy of the organs of reproduction and the natural history of generation, with the necessary pictorial illustrations, &c? In order to get into the parlor it is necessary to emasculate physiology. Being thus *eunuchated* its interest to the medical student and to the fashionable public, is sacrificed to gratify an ambition which should be reserved for the profession alone—a sphere in which Professor Draper hitherto had won a high reputation.

The learned propagandists of popular medicine know very well that without a knowledge of practical anatomy, never derivable from books, no progress can be made in physiology. The actions, functions, and laws of the living body must be studied constantly in reference to their anatomical structures.

Professor Carpenter in his able work on the "Principles of Comparative Physiology," (4th ed. 1854,) says,—“The first group of phenomena encountered by the Biological [physiological] student is that presented in the many hundred-thousand *diverse forms of organic structure*, of which the Animal and the Vegetable kingdoms are made up; and it is necessary at the very outset of the inquiry, to settle the principles upon which these are to be compared.” The distinguished Professor Dunglison in his volumes on “Human Physiology,” (which is a *popular work with medical men*) says,—“Having described the *intimate structures of the tissues*, we pass to the consideration of the functions [physiology]; the character of each of which is, that it fulfils a special and distinct office in the economy for which it has in general an *organ or instrument, or evident apparatus of organs*.”—“In studying each of these functions, we shall first of all describe *the organ or apparatus concerned in its production*,” &c.

Neither the fashionable world which devotes itself to conventionalisms, nor the industrial world which is doomed to ceaseless toils, has the leisure to learn anything worth knowing in anatomy, physiology, or pathology.

It is a satire upon science, and a burlesque upon humanity to urge the people to read, study, and inwardly digest, that most difficult of all sciences, Physiology, without putting them through a course of study in the dead-house, and demonstrating the anatomical tissues and organs.

Ladies and gentlemen having trailed through blood and achieved anatomy would then be able, at length, to think and talk understandingly upon digestion and defecation, absorption and excretion, the mucous and biliary secretions, peristaltic actions and urination, the circulation and respiration, glands and intestines, the menses and monstrosities, the ova and the semen, copulation and conception, the testes and the hymen, pregnancy and the placenta, sterility and virility, the anus and the uterus, and so on *ad infinitum*. Charming idealities upon the banks of the Hudson, “in the starry light of a summer’s night!”

Professor Draper intends this book “to conform to his course of Lectures and to the wants of his medical class.” But in the same page he says, “the reader will also find that the opportunity is taken, when

ever it occurs, of directing his attention to those arguments which the subject offers for elucidating the moral nature of man. Believing that the right progress of society depends on its religious opinions, and observing with concern the growing carelessness which is manifested in these respects in our times, the author has not hesitated to show how advantage may be taken of the facts presented by physiology. The existence of God, his goodness, power, and other attributes ; the existence of the soul of man, its immortality and accountability ; the future life ; our relations to and position in the world ; its government ; these are topics with which Physical Science is concerning itself, and from which Physiology cannot hereafter be disconnected." Alas ! for the pretensions of Physical Science that it should not distrust its feeble, yet presumptuous powers in this behalf. Alas ! that Divine Revelation " which has brought life and immortality to light," should need support from chemistry, physics, and physiology,---subjects which it never deigned to appeal to, which it is silent upon, and which are wholly distinct from its scope and ends.

Although " Human Physiology, statical and dynamical," " pales its ineffectual fires" upon the same page containing the last quotation ; yet the light is neither logical nor professional, but popular, giving, however, an insight into the mission or purpose of the book : " To the medical-profession," says Dr. Draper, " as matters now stand, nothing is of more importance than the dissemination of physiological knowledge. Empiricism could not flourish as it does if the structures and functions were better understood. How many advantages would arise if the elements of this science were made a part of general education in America !—What branch of knowledge has intrinsically a better title thereto ?—Such a diffusion of physiological knowledge would not only tend to a repression of empiricism, but would also exert an effect in raising the standard of acquirement among medical men themselves. That a great revolution is impending in the practice of medicine, no one who is at all observant of the progress of science can doubt. The great physicians of the future will be the great physiologists. He who can best correct the imperfections of a machine is he who best knows its structure and action."

Professor Draper proclaims most emphatically the fundamental doctrine that the great doctor is the great physiologist, and, that as soon as the public becomes a great physiologist it will reject the quacks ! Aye ! Dr. Draper and your doctors of medicine too. Anatomy and physiolo-



gy being the great guides to the cure of diseases, and the public having mastered these, will write its own prescriptions, with the apothecary's aid, thereby saving its precious gold.

If Dr. Draper were not a serious gentleman, seeking even to incorporate religion with physiology, it would naturally be supposed that he intended to be ironical—that in wishing to get the public to study physiology, (having of course first studied anatomy) he hoped to aid the doctor in replenishing his bank deposits, inasmuch as all experience proves that the more the people study popularized home medicine the more it becomes bewildered fancying it has diseases of this or that organ, be it the heart, kidney, the liver, the stomach, the guts, the nerves, the womb, cancer, &c. Hence the public with its night-mare, its hypochondria, and real or imaginary disease, would fall to doctoring itself, so that the M. D., may be finally called upon, though too often after irreparable mischief has been done.

It is here, if anywhere, that—

“A little learning is a dangerous thing  
Drink deep, or taste not the Piërian spring.”

Scarcely one in ten, even among graduated doctors, have the time, taste, energy, industry, means, and capacity, to master the science of physiology, testing and verifying it by experiment, generalizing its facts and principles understandingly by a profound investigation into the experimental researches of others, as Dr. Draper has done.

The morbid effects produced upon the popular mind by reading medical books without being able to understand them is inimitably illustrated in *Tristram Shandy*. A humorous argument may sometimes be, as in this case, better than a solemn one. The reader will, therefore, judge whether the value of the quotation to be given, will not compensate for its length.

“My father who dipped into all kinds of books, had found out, that the lax and pliable state of the child's head in parturition, the bones of the *cranium* having no sutures at that time, was such,—that by force of the woman's efforts, which, in strong labor-pains, was equal, upon an average, to the weight of 470 pounds avoirdupois, acting perpendicularly upon it;—it so happened that in forty-nine instances in fifty the said head was compressed and moulded into the shape of an oblong conical piece of dough, such as a pastry-cook generally rolls up, in order to make a pie,—Good God! cried my father, what havoc and destruction must this make in the infinitely fine and tender texture of the *cerebellum*!

“But how great was his apprehension, when he further understood, that this force acting upon the very vertex of the head, not only injured the brain itself, or *cerebrum*, but that it necessarily squeezed and pro-

pelled the *cerebrum* towards the *cerebellum*, which was the immediate seat of the understanding !—Angels and ministers of grace defend us ! cried my father,—can any soul withstand this shock ?—No wonder the intellectual web is so rent and tattered as we see it ; and that so many of our best heads are no better than a puzzled skein of silk.

“ But when my father read on, and was let into the secret, that when the child was turned topsy-turvy, which was easy for an operator to do, and was extracted by the feet ;—that instead of the *cerebrum* being propelled towards the *cerebellum*—the *cerebellum*, on the contrary was propelled simply towards the *cerebrum*, where it could do no manner of hurt ; by Heavens ! cried he, the world is in conspiracy to drive out the little wit God has given us,—and the professors of the obstetric art are listed into the same conspiracy. What is it to me which end of my son comes foremost into the world, provided all goes right after, and the *cerebellum* escapes uncrushed ?

“ It is the nature of an hypothesis, when once a man has conceived it, that it assimilates everything to itself, as proper nourishment, and, from the first moment of your begetting it, it generally grows the stronger by everything you see, hear, or understand. This is of great use.

“ When my father was gone with this about a month what a blaze of light did the accounts of the *cæsarian* section cast upon this hypothesis ! Here you see there was no injury done to the *sensorium* ;—no pressure of the head upon the *pelvis* ;—no propulsion of the *cerebrum* towards the *cerebellum*, either by the *os pelvis* on this side, or the *coccygis* on that ; and, pray, what were the happy consequences ? Why, sir, your Julius Cæsar, who gave the operation a name : and your Hærmes Trismegistus, who was born so before the operation had a name ;—your Scipio Africanus ; your Manlius Torquatus ; and many more who figured high in the annals of fame,—all came *sideway*, sir, into the world.

“ The incision of the *abdomen* and *uterus* ran for six weeks in my father’s head ; he had read and was satisfied, that wounds in the *epigastrium*, and those in the *matrix*, were not mortal ;—so that the belly of the mother might be opened extremely well to give a passage to the child. He mentioned the thing one afternoon to my mother,—merely as a matter of fact, but seeing her turn as pale as ashes at the very mention of it, contenting himself with admiring what he thought was to no purpose to propose.”

The publicity given in the English newspapers to the melancholy details of the case of the Princess Charlotte who died in child-bed, caused disastrous results to parturient women in that country. In his *Historical Sketches*, (ii 48) Lord Brougham says, “ the whole country felt the blow, the female imagination was occupied, bewildered, distracted, and the labors of child-bearing caused innumerable victims.”

Medical studies how useful so ever they may be to the physician in curing the diseases of others, are not perhaps wholly guiltless of causing

his own diseases in some instances. It has been remarked that not a few physicians of the greatest ability have fallen victims to the very maladies which they have illustrated by their genius, discoveries and researches, as Laënnec, Corvisart, Broussais, &c., for example. Other things being equal, there is less probability of curing a physician of disease of the heart, than one unacquainted with the complex anatomy and maladies of that organ, because the physician's superior knowledge of the inherent difficulties of curing such a malady would greatly depress his mind and weaken his hopes. Melancholy, doubt, or despair would aggravate every symptom, while hope, on the contrary, would be a powerful auxiliary to the medical treatment.

With regard to the people in this point of view,—

“If ignorance be bliss,

’Tis folly to be wise.”

--if by any possibility a smattering of knowledge in physic can be called wisdom. The practical physician finds no patients so refractory, so perniciously absurd in regard to the carrying out a rational plan of treatment, as those ladies and gentlemen who have been studying medical books which they cannot understand. They have a theory and a remedy for everything, and expect the doctor to conform thereunto. This has been called, *doctoring the doctor*. Sometimes the nurse, however, doctors both doctor and the patient.

Submissive patients full of faith in, yet ignorant of, physic, who have for their doctor one skilled in that most difficult of all the inductive sciences, are less likely to fall in the battle with disease than others.—In cases where no active treatment is required, a distilled water, an inert syrup or a bread-pill, is often powerfully curative by influencing the imagination. Having from day to day taken the temperature of a febrile patient treated by a physician of the Charity Hospital, I was gratefully informed by the sick man that my treatment had done more for his relief than anything he had tried! The thermometer, perhaps, saved the life of this man. He watched this instrument with deep interest when placed in the palms, bend of the arm, axilla, &c., as also the writing concerning the same. He had faith.

Legitimate Medicine is one, indivisible, and indestructible. It can only perish when thought, reason, observation, experimental philosophy, and animated nature shall be annihilated. It may for a time pass through various phases; it may be obscured by passing clouds of error, or sway to and fro by the storm of charlatanism.



The state of medicine at present, is somewhat remarkable, anomalous, and complex. While it is progressing in regard to science, the *status* of the profession as whole, has not kept pace with the former ; at least, the public never were more disloyal to it than now. Whatever may be the short-comings of regular physicians individually in reference to their education and competency to minister to the sick, they stand on a higher level in this behalf than irregular practitioners. The latter class, however, have obtained the confidence of the public to an unexampled degree. To deny or ignore this fact is folly and folly only. The legislatures of many of the States grant charters and make endowments in favor of Botanic, Thompsonian, Eclectic,\* Physio-Medical, and the so-called Reform Colleges. Homœopathic, Hydropathic and perhaps some other sects are recognized either in law or in popular sanction and patronage. These heterogeneous parties, though hostile to each other, agree in one particular, namely, hatred to regular physicians. They do not rest their hopes upon charters, endowments, college walls, and diplomas made easy to their pupils desirous of the Degree of M. D.: they have established numerous medical Journals addressed not only to their adherents but to the great public. In this, however, they approximate some of the regular faculty of whose ability and scientific knowledge there can be no question, and whose motives can, peradventure, be explained by other ends than the well-being of society or the honor or usefulness of the profession. So true is it that extremes meet.

The irregular practitioners possess the energy of politicians in regard to their ends through the management of the people by associated action. One of their Journals just received from the West, reports the proceedings of a meeting which adopted the following resolutions :

*“Resolved,* That the recent action of the legislature of Georgia, by which the Reformed Medical College of that State received another \$5,000 donation, refusing, at the same time, by a two-thirds vote, a similar donation to the Allopathic school, contrasted quite satisfactorily with the unjust enactments, perjured witnesses and filthy prisons which opposed the pioneers of this reformation, showed conclusively the power of truth and indicated that the day of universal triumph is not far distant.

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\* Since the above was in type, the 12th Annual announcement of the Eclectic Medical Institute of Cincinnati has been received, from which it appears that during the last eleven years, the Matriculants of that School amounted to 2,396,—of which number 657 have received the Degree of M. D. ; for the last four years the classes have ranged from 251 to 308, and the Graduates from 64 to 126 per year—a progress for good or evil which has no parallel in the annals of schools—a progress which promises soon to surpass, in number, the Graduates of the Medical School of Paris.

"*Resolved, &c.*, That their practice is unreliable, inefficient for good and its results a monstrous evil to mankind. *Resolved*, \* \* \* however much we may respect Allopathic physicians" (as they call the regular faculty) "for their general intelligence and honesty of purpose, we deem it impossible for them to become *true* physicians, or to ever regain or hold the confidence of mankind, while their main doctrines remain untrue.

"*Resolved*, That health, happiness, life and the welfare of this and future generations depend on the settlement of the great questions now in dispute, and, therefore, it is wrong for any class of men to stand *aloof* and oppose all discussion because their opponents are "contemptible," for, if the court can deal with the felon at the bar and the minister dare approach the convict's cell, in the performance of duty, the *guardians of the public health* may condescend to place the people aright on important questions, without in the least compromising true dignity."

This tableau of the moral and scientific *status* of the profession by the Physio-Medicalists is not more repulsive than that by the American Medical Association as drawn by the late Dr. Chapman, its first President, whose address to that body avows that "*the profession has become corrupt, and degenerate to the forfeiture of its social position, and with it, of the homage it formerly received spontaneously and universally.*" Since this address, now more than nine years ago, the Association at its annual meetings has added so many dark strokes to this picture that its enemies can never rival it in this behalf. The picture by the Association represents the actual and intending doctors, *but not the Professors in the Medical Colleges* in the blackest colors. Indeed it has endorsed the ability of the Professors. The Committee on Education for 1853, in comparing the United States to other countries in regard to medical education, avers that the existing "*disparity*" though unfavorable to our country, "*has no reference to our public teachers!*" A great country truly! Why does not each medical student appoint himself M. D.?—This would be a *parity* not a "*disparity*" to the self-appointment of Professors.

Another American Medical Association full of moral courage, is called for—a convention in which no delegate shall have a direct pecuniary interest—a convention the fundamental principles of which shall be the settlement of an organic law or "new commandment" as to the mode of appointing teachers, seeing that the present is the worst human wit could invent, all adulation to the contrary notwithstanding. The reader will see this subject discussed at length in Vol. XI, 679, of this Journal, the course of subsequent events having confirmed the argument there—

\* Physio-Medical Recorder : Cincinnati, Sept. 1856. Edited by W. H. Cook, M. D., and A. Curtis, M. D. This periodical has reached XXI vols.

in advanced. A fundamental revolution is required in the organization of the medical colleges as to the mode of appointing and paying professors, as in France, so that the number of graduates shall no longer represent the number of dollars received by the professors.

A professorship thus obtained after a *concour* examination, would with a fixed salary, be an object worthy of the highest ambition. It would afford the public a double guarantee, namely, that the professor is highly worthy of patronage as a private practitioner, and that having no pecuniary interest to sway him, as a guardian of the public, he will not commission his pupils with the degree of M. D., unless they shall be duly qualified to practise their profession. Here is the reform needed. It is free from Utopianism,—it has, hitherto saved France from quackery and secured for the Doctorate the respect of the public as well as that of the medical faculty throughout the world. But this plan finds a fundamental and growing antithesis in Republican America. Good for France, but not for America ! So reasoned Joe Miller who having given salt herring to a sick Englishman who got well, tried the same remedy upon a Frenchman, who having died,—the inference drawn was, that salt herring cures an Englishman but kills a Frenchman.

But to return to the irregulars :—

Whatever doubt there may be as to the motives and sincerity of these self complacent practitioners in their claim of superiority over the regular faculty in learning and skill, there can be none as to their vigilance, industry, and partizan zeal, while some of their leaders display abilities which cannot be despised. Their ill-founded antagonism like all previous charlatanries, will have its day,—perhaps, a longer one than usual. This antagonism which commenced with the illiterate Samuel Thompson, who patented lobelia, red-pepper, &c., has been prominent, active and increasing for more than a quarter of a century, but has eventuated in several sects that do not harmonize except in their hatred of, and violent opposition to the “regular school.”

Be the fortune of legitimate Medicine what it may—whether it shall be accepted or rejected by the public, it is the bounden duty of the profession to remove all just causes of reproach and antagonism by increasing the amount of education and qualification of all admitted into its ranks.

The aberrations of the public, its biases in favor of quackery cannot be rectified by the popularization of medical science. The diffusion of general intelligence will be as it has always has been, in favor of legiti-



mate medicine. The great majority of the enlightened public will naturally conclude that physicians thoroughly educated in their science and art, are, and ever must be superior to pretenders. It is true that the public has at present little confidence in the diploma or degree of M. D., whether conferred by Steam-Botanic, Eclectic, Reform, Homœopathic, or "old School Colleges." The Doctorate by the showing of the regulars themselves, is conferred upon many who are not qualified to practise their vocation. The public is, therefore, right in distrusting the degree as a criterion by which to judge of medical competency. The remedy, then lies, for the present, wholly with the Medical Faculty. Let the diploma be what it should be, a guarantee that its possessor is competent to fulfil his duties as a practitioner. Let the public ignore, anatomies, physiologies and charlatanries. Let each "be up and doing" in his own proper calling—

"Like as the star  
That maketh not haste,  
That taketh not rest,  
Be each one fulfilling  
His God-given hest."—GOETHE.

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ART. VII.—*Yellow Fever and Quarantine.—Brief Comments on the Published Opinions of Certain Learned Bodies.* By E. D. FENNER, M. D., New Orleans.

As Yellow Fever and Quarantine command at the present time a large share of attention, both professional and public, I offer to the readers of this Journal some very brief comments on the opinions and conclusions put forth by two learned bodies, viz. the consulting physicians of the Boston Board of Health, and the General Board of Health of London; intending at a future time, if I have leisure, to comment likewise on the conclusions of the celebrated Dr. Chervin, of Paris and Dr. Daniel Blair, of Demarara.

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The Boston Medical and Surgical Journal of Sept. 4th, 1856, contains the following interesting communication, which I shall give entire, dividing it into separate paragraphs, so as to comment upon each :

"*Yellow Fever.*—The following letter, under date Aug. 19, 1856, was sent to the Boston Board of Health, by the Consulting Physicians of the City.

GENTLEMEN.—The undersigned, Consulting Physicians of the City of Boston, in reply to a communication this day received from the Mayor, beg leave to report :—

1. "That in their opinion yellow fever is not a *contagious* disease, communicable under ordinary circumstances from one person to another directly, but that it is what is called an *infectious* disease, of which the existing cause is capable of being carried from one place to another."

I would only suggest that the word *sometimes* be inserted in place of the words "*what is called*" in this paragraph ; for thousands of instances could be adduced in which cases of yellow fever, vessels and all kinds of articles were transported from infected places to others free from the disease, and thus brought in contact with unacclimated or susceptible persons, *without communicating the disease*. At the same time it is not denied that the contrary has occurred in numerous instances within the last three years ; therefore, yellow fever is *sometimes*, but *not always infectious*.

2. "That during the prevalence of yellow fever in any place or district, a ship lying there in the docks, becomes, for the time, part and parcel of such place or district, and if it then sails for another port, it is liable in some cases to carry with it the material or cause of the disease, in the manner a house might do, if we could suppose it to be removed under like circumstances."

No objections to this paragraph.

3. "Before an epidemic, whether contagious or infectious, can spread in a new place or city, two things are necessary :—1. The introduction of the causes. 2. A predisposition on the part of the inhabitants to receive the disease. The causes of the best known epidemics and endemics, such as small-pox, ship-typhus, and yellow fever, are apparently carried every year into all large commercial cities. Yet they do not spread so as to become epidemics, except in certain years or seasons under the predisposition above mentioned."

I cannot agree that the "two things" here mentioned are *all that is necessary* for the spread of *yellow fever* "in a new place or city." I think there is incontestable evidence of this disease having originated *locally and spontaneously*, without the intervention or aid of any *foreign cause whatever*. I believe that the "*predisposition*" here mentioned is chiefly if not entirely due to *local influences*, and is a matter of *paramount importance*. Whether yellow fever could or would *originate in perfection*, without extraneous aid, at every place where it has prevailed, admits of doubt ; but thousands of facts testify that the disease is entirely harmless when carried to places where there is no *predisposition to its prevalence*.

4. "The fact that persons have died in vessels at sea, does not prove that the cause of infection was on board such vessels; for such persons may have contracted the disease on shore before sailing. Nevertheless, the occurrence of several consecutive cases might justify a suspicion of the local origin of such cases in the ship."

In Dr. La Roche's great work on Yellow Fever may be found incontestable evidence of the origin of this disease on board of foul ships.— If the cause of yellow fever can be generated in such places, why could not the same take place on land?

5. "Ventilation and purification are commonly believed to be the best preventives against infection. Yet it is not settled that these precautions are effectual, still less for what time and in what degree they are required. In cities where yellow fever prevails, it has not commonly ceased till the arrival of cold weather."

I believe that *ventilation and purification* are our best reliances for the prevention of yellow fever, and that they should be vigilantly maintained *for all time*. All low, filthy, and crowded places in the southern parts of North America are liable to suffer from this disease, and among places which have been frequently visited by it, wherever there has been a marked amelioration in the frequency of its occurrence or the malignancy of its type, it will generally be found that there has been a corresponding improvement in *ventilation and purification*. Yet I must admit that these precautions are not *perfectly effectual* during the prevalence of a wide spread epidemic like that of 1853-'4 and '5 in this region, where many pretty clean villages and even isolated country residences were severely scourged apparently in consequence of the introduction of the infection.

The *latter part* of the above paragraph is true only of the more northern localities where yellow fever prevails. In New Orleans, and farther South, whenever an epidemic breaks out *early*, it subsides *early*, almost regardless of the temperature of the weather. If the disease breaks out *late* in this city and the region above, numerous cases will occur long after the appearance of frost.

6. "The immunity of cities from epidemic diseases has not been found proportionate to the strictness of their quarantine regulations. Boston has been one of the most favored cities in regard to exemption from these diseases, though its quarantine laws have been more lax than those of most other cities of equal size."

The fact stated in this paragraph is worthy of most serious consideration, as it shows how delusive is the hope of keeping off yellow fever, and similar epidemical diseases by means of quarantines and sanitary



cordons. In fact, quarantine regulations cannot be enforced properly in the United States, and the way they are kept up is a mere farce.— Within the last three years, enough yellow fever has been carried into Boston, New York, Philadelphia, Baltimore, St. Louis, and various other places, to have spread general havoc among the people, if *nothing else* were required for its propagation than the introduction of its peculiar infection. We now maintain quarantine on the river below New Orleans, and also at the two other entrances from the Gulf, but several cases of yellow fever have been introduced from Vera Cruz this summer, and the vessels that brought them have been allowed to come into the City and discharge their cargoes. In addition to this, a few cases of yellow fever have certainly originated in different parts of the City; but it happens to be one of our healthiest years, and the disease would not prevail. I have known yellow fever to be imported into New Orleans on sundry occasions without producing any injurious effect whatever. On the other hand, I have never been able satisfactorily to trace the first cases of an epidemic to a foreign source. That a *foreign element* may sometimes give increased malignancy to an epidemic yellow fever originating in this City, is an opinion entertained by some physicians, but I have met with no satisfactory proof of it.

7. "Judging from such laws as are known of the epidemic, and from the past history of the City of Boston, the undersigned are of opinion, that in all cases, passengers with their baggage may be permitted to land and enter the city without hindrance. But ships, arriving in sickly seasons from ports where yellow fever prevails, should be visited by the Port Physician, and if in his opinion there is no cause for the apprehension of danger, they may at once be permitted to proceed to the city. But if it should appear that the disease is uncommonly malignant or extensive in the port from which the ship has sailed, or if she has remained in such port for an unusual length of time, under circumstances favorable to the reception of the disease, then the ship should be detained at quarantine until the hatches have been opened, and the hold thoroughly ventilated. If, after this, the persons on board remain healthy, the vessel may be permitted to proceed to her destination in the city. The time necessary for such probation should be settled by the circumstances of each case and the judgment of the Port Physician."

Respectfully,

D. HUMPHREYS STORER,  
JAMES AYER,  
JACOB BIGELOW,  
JOHN JEFFRIES,

Consulting Physicians of the City of Boston

The advice given in this paragraph is very judicious.

Thus closes the communication of the Consulting Physicians of Boston, which, on the whole, I consider highly creditable to the authors.

*Conclusions of the General Board of Health, relative to Yellow Fever and Quarantine.\**

In my "History of the Epidemic Yellow Fever at New Orleans in 1853," I gave a general consent to the conclusions of this learned body, but subsequent events and farther observations have served in some measure to modify my views. I shall now take up the conclusions *seriatim*, and offer a remark or two upon each, as follows :—

*Conclusions of the General Board of Health relative to Yellow Fever.*

"From a consideration of the whole of the preceding evidence respecting Yellow Fever, we have arrived at the following conclusions :—

1. "That Yellow Fever Epidemics break out simultaneously in different and distant towns, and in different and distant parts of the same town, often under circumstances in which communication with infected persons is impossible."

I believe that Yellow Fever has broken out at places in this country where communication with infected persons was impossible—(instance, Gallipolis, Ohio, 1796,) but in the region of New Orleans I have not known epidemics to "break out simultaneously at different and distant towns" without communication with infected persons or places. Most generally, the disease makes its appearance first in New Orleans, and subsequently, at places more or less distant, but in constant communication with this city. Such is the fact, but as to the effect of this communication on the spread of the disease, there is much difference of opinion.

It is true that the first cases of epidemics in New Orleans do occur at different and distant parts of the city and with no apparent connection between them ; but it is likewise true that the disease first reaches an *epidemic extent in some particular quarter or section*, and thence proceeds to other parts of the city. Sometimes this occurs in the upper part, and again in the lower. The former was observed in 1853, the latter in 1848.

2. "That Yellow Fever Epidemics are usually preceded by the occurrence of individual or sporadic cases of the disease, which sporadic cases are likewise common in seasons when no Epidemic prevails.

\* "The Second Report of the General Board of Health of England on Quarantine in Yellow Fever," presented to both Houses of Parliament in April, 1852. With its appendices extending to 414 pages. It contains an extensive and searching inquiry into the subject, from authentic documents, received from all places where Yellow Fever has prevailed, both in America and Europe, and is signed by the Earl of Shaftesbury, Mr. Edward Chadwick, and Dr. T. Southwood Smith.

I think this conclusion is perfectly correct ; at least, in respect to New Orleans."

3. "That Yellow Fever Epidemics, though occasionally extending over large tracts of country, are more frequently limited as to the space over which they spread, often not involving the whole of a town, and sometimes not even any considerable district of it."

This conclusion is correct.

"4. That Yellow Fever Epidemics do not spread from district to district by any rule of gradual progression, but often ravage certain localities, while they spare entirely, or visit very lightly, others in the immediate neighborhood, with which the inhabitants are in constant intercommunication."

I cannot fully concur in the *first part* of this conclusion ; but the *latter part* is supported by many facts. During the late terrible epidemic at Norfolk, Va., the village of Hampton, (only five miles distant and in constant communication,) escaped almost entirely. The epidemics of Canton, Brandon, and Cooper's Wells, in Mississippi, were strictly confined to the immediate localities, notwithstanding many persons carried the disease into the surrounding neighborhoods.

Such was formerly the case at New Orleans, Mobile, Natchez, and Vicksburg ; but *latterly*, the area of these epidemics has been very much enlarged.

5. "That Yellow Fever Epidemics, when they invade a district, do not spread from the houses first infected to the next, and thence to the adjoining, and thus extend as from a centre ; but, on the contrary, are often confined to particular houses in a street, to particular houses on one side of a street, to particular rooms in the same house, and often even to particular rooms on the same story."

I do not think that the "*contrary*" of the first part of this conclusion is fairly or fully made out. If "Yellow Fever Epidemics do not spread from the houses first infected to the next, and thence to the adjoining, and thus extend as from a centre," as is stated, they must jump from one house to another at a considerable distance, omitting or passing over many intermediate residences which would be considered more likely to take the disease from contiguity to the focus of infection. I admit this to be the fact, but the same likewise occurs with epidemic small-pox, scarlatina, measles, and cholera. The *materies morbi* gets into the atmosphere, and may light upon a house two or three hundred yards distant, as soon as upon one that is much nearer the focus of infection. Many facts might be stated in support of this position, if I had the time. As I have stated in another place, although the first or spo-



radic cases of yellow fever in New Orleans do occur at different and distant places, it is nevertheless true, as before stated, that the disease does usually first attain an *epidemic extent* in some small section or quarter of the city, and radiates from that, somewhat as from a focus of infection.

The facts stated by the Board, that yellow fever epidemics "are often confined to particular houses in a street, to particular houses on one side of a street, to particular rooms in the same house, and often even to particular rooms on the same story," in my humble opinion, tend more strongly to *prove infection*, than the contrary.

6. "That in general, when Yellow Fever breaks out in a family, only one or two individuals are attacked; commonly the attendants on the sick escape; and when several members of a family are successively attacked, or the attendants on the sick suffer, either the epidemic was general in the locality, or the individuals attacked had gone into an infected district."

My observations do not sustain the opinions expressed in this conclusion. Yellow Fever will *only* break out in a family under one of the following considerations:—there must either be 1, a *strictly local cause* capable of giving rise to the disease; or 2, an *efficient general cause* prevailing in the locality; or 3, a *materies morbi introduced from an infected district* and capable of communication from one person to another. Under the *first* and *second* of these conditions, the disease will *generally* run through the family; only one or two individuals *escaping*; and *commonly*, the attendants on the sick, if not acclimatized, are most liable to be attacked. Under the *third* condition or that of *infection*, if the disease or its *materies* be carried entirely *beyond the area of the prevailing epidemic influence*, it will not be communicated once in a thousand times; but if *within* the limits of said area, which are *extremely variable*, it may take effect; and if it does, the attendants on the sick will be most liable to suffer.

7. "That when Yellow Fever is prevalent in a locality, the most rigid seclusion in that locality affords no protection from the disease."

Occurrences in this region have been somewhat contradictory in relation to this conclusion. It is a notorious fact that yellow fever very rarely attacks the permanent prisoners in the New Orleans *Calaboose*, whilst the epidemic may be raging outside. In 1853, the disease was introduced into the *Calaboose* by a prisoner who had been confined there three months, but was taken out for trial when the epidemic was prevailing, and thus contracted it. This case was followed by about thirty

others in the prison, five of which died ; yet the disease spread no farther, notwithstanding there were about 300 prisoners in the jail at the time who were close together and there was free intercommunication amongst most of them.

When the epidemic was prevailing in the interior of the country in 1853, families were attacked which had maintained a strict non-intercourse with infected places and persons ; whilst others attributed their escape to the same observance.

8. "That, on the other hand, so great is the success attending the removal from an infected locality, and the dispersion of the sick in a healthy district, that by this measure alone the further progress of an epidemic is often arrested at once."

This is certainly true both of Yellow Fever and Cholera, and should be resorted to as far as it is practicable ; but it can only be done when the epidemic influence is confined within *narrow limits*. What is to be done when this influence extends over an area of one or two hundred miles, as was the case around New Orleans in 1853 ?

9. "That such dispersion of the sick is followed by no transmission of the disease, not even when the sick are placed in the wards of a hospital among patients laboring under other maladies."

Innumerable instances of this have been known, showing that the disease is not infectious or contagious *per se* ; but the sick *must* be disposed *beyond* the limits of the prevailing epidemic before this happy result can be expected. In fact, it only occurs when the epidemic is confined to narrow limits.

10. "That no one of the preceding facts can be reconciled with any other conclusion than that, whatever may be the exciting cause of Yellow Fever, it is local or endemic in its origin ; and the evidence of this conclusion is, therefore, cumulative."

I have no doubt of the *local or endemic* origin of Yellow Fever—in fact, I think it is most intimately connected both in its *origin and nature* with what are called *malarious fevers*.

11. "That the conditions which influence the localization of Yellow Fever are known, definite, and, to a great extent, removable ; and are substantially the same as the localizing causes of Cholera, and of all other Epidemic diseases."

I am not quite so sure of this ; still I think we have it in our power to do a great deal towards the prevention of Yellow Fever and cholera too.

12. "That, as in the case of all other Epidemic diseases, in proportion as the localizing causes are removed or diminished, Yellow Fever ceases to appear, or recurs at more distant intervals, and in milder forms."

The history of Philadelphia affords a striking illustration of the good that may be effected in this way, as may be learned from Dr. LaRoche's late work on Yellow Fever.

13. "That besides the common external localizing causes, there is one constitutional predisposing cause of paramount importance, namely, non-acclimatization—that is, the state of the system produced by residence in a cold climate; in other words European blood exposed to the action of tropical heat; the practical lesson being, that the utmost care should be taken to prevent individuals or bodies of men recently arrived within the Yellow Fever zone, from going into a district in which the disease actually exists, or has recently been present."

Here is the statement of a well established fact. *Acclimatization is indispensable*; but can rarely be attained without actually undergoing Yellow Fever. The "*practical lesson*" here inculcated is therefore of but small value to one who comes with the determination to live in New Orleans or die in the attempt. It is about equivalent to the advice—*never to go into deep water, till you have learned to swim!* Every unacclimated person who comes to live in New Orleans the year round should expect to encounter Yellow Fever; although some do escape it entirely.

14. "That there is no evidence to prove that Yellow Fever has been imported."

The learned Board must certainly here mean *Yellow Fever epidemics traceable to importation*.—otherwise, "it is a most lame and impotent conclusion." I am quite confident that Yellow Fever has been imported into New Orleans nearly every year of the fourteen I have lived here, and I have but little doubt that the same has occurred for half a century past. Nor do I doubt that it is likewise imported annually into the city of New York.

15. "That consequently, the means of protection from Yellow Fever are *not quarantine restrictions and sanitary cordons*, but *sanitary works and operations*, having for their object the removal and prevention of the several localizing conditions, and when such permanent works are impracticable, the temporary removal as far as may be possible, of the population from the infected localities.

"We deem it our duty to state, in conclusion, that from the most careful examination which we have been able to make to the mass of evidence submitted to us from which the foregoing conclusions have been deduced, we have not found a single fact or observation clearly ascertained and authentically recorded, opposed to the general tenor of such evidence. We have met with no exceptional cases. We have indeed found the opinions of some authorities, for whom we entertain great respect, not in accordance on some points; but these have reference for the most part to matters of a purely professional and scientific



nature. On the great practical question, whether, whatever may be the nature and mode of propagation of Yellow Fever, Quarantine and Sanitary Cordons can afford any real protection against its introduction and spread, we believe there is now a very general unanimity of opinion, in accordance with the evidence we have submitted, that *they cannot*. We believe there is the like general agreement in this further practical conclusion, that the substitution of Sanitary and Hygienic measures for Quarantine isolation and restriction, would afford more certain and effectual protection."

I fully agree that "*Sanitary or Hygienic measures*" are preferable to *Quarantine restrictions or Sanitary Cordons* as a "*means of protection from Yellow Fever*;" but at the same time I think every large commercial city should be provided with a *Health-Station* at its entrance from the sea, for the purpose of preventing the introduction of unquestionably contagions and infectious diseases. Of course, such establishments, should be *judiciously conducted*, so as to interfere as little as possible with the ingress of *uninfected* vessels and passengers. It would seem that every city generates enough disease within its own limits to keep down its surplus population, without the aid of imported infection or contagion; and therefore, we should endeavor to prevent, as far as possible, the introduction of such *foreign causes* of death. But, after all I would ask—what benefit has been derived from Quarantines in this country? Do they effectually keep out Yellow Fever, Ship Typhus, or even Small Pox? Certainly not! All of our principle Seaports now maintain institutions of the kind, yet hardly a year passes without the introduction of one or more of these diseases from abroad. During this very year, Yellow Fever has been introduced abundantly into New York and New Orleans; yet there has been no epidemic in either place. At other times, epidemics of Yellow Fever have prevailed at these places, when no such introduction could be proved. It is asserted that Yellow Fever epidemics have often broken out immediately after the introduction of the virus into places where this disease was never known to have prevailed before. This is doubtless true; but, on the other hand, it can be proved that Yellow Fever has broken out and prevailed at places where *importation of the virus was impossible*. If an infected person, or boat had started from New Orleans in the month of July or August 1796, and travelled towards the town of Gallipolis in Ohio, with the best means afforded at that day, neither could have possibly reached there until long after the appearance of severe frost, when the virus would have been entirely harmless; yet that village was severely scourged by Yellow Fever in the summer of that year.

If then, Yellow Fever is not kept out of our cities by such Quarantine regulations as we have—and if the mere introduction of infected persons, vessels or goods is not alone *sufficient* to cause the outbreak of epidemics, there must be wanted *some other condition* that is of paramount importance in the production of such an epidemic; and I would ask—of what use is the Quarantine? To be candid, I will state the *only benefit* that is claimed for it by its most sincere and liberal advocates:—they maintain that a place may get into a *condition* which would not, of itself actually give rise to Yellow Fever, without the introduction of a *foreign element*, but that if *at that time* the Yellow Fever virus should be introduced, an epidemic would most certainly follow; thus showing the great advantage of preventing, if possible, the introduction of the virus. They compare it to a *combustible magazine* which would not explode without the application of an *ignited match*. Now, there may be some truth in this position, and there are doubtless some striking facts recorded in support of it. But since we have shown that the dissemination of this disease *is not and cannot be prevented* by Quarantine regulations, unless carried to the extent of *perfect non-intercourse*—what then is left to us in the way of *prophylaxis*, but the execution of such *sanitary measures* as experience has proved to be more or less effective in preventing *that condition* which is indispensibly necessary for the production of an Epidemic!

The *peculiar constitution of the atmosphere* which predisposes to the outbreak of Yellow Fever is unknown to us, and beyond our control; and the dissemination of the disease, once started, cannot be prevented; since it for the most part only becomes *localized* at places where it finds an appropriate *nidus* for its regeneration, we are forced to the conclusion that our chief dependence for the prevention of this disease must rest upon *local sanitary measures*. If these fail us, we are doomed to suffer. The cause must then be chiefly *atmospheric*, and “like the wind, it goeth where it listeth—we hear the sound thereof, but we know not whence it cometh, nor whither it goeth.”

## PROGRESS OF MEDICINE.

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ART. I.—*Experiments on the Glycogenic Function of the Liver, performed during the Course of Physiology at the School of Medicine of Bordeaux.* By M. Cyprien Oré, Professor. Reported by J. Jeannel, Professor in said School. Translated from the *Journal de Médecine de Bordeaux*, by M. MORTON DOWLER, New Orleans, La.

THE lecture of the 27th of May, was devoted to the exposition of the theory of Claude Bernard, on the glycogenic function of the liver, and to the verification of the beautiful experiments of this physiologist, which establishes so clearly the reality of this function.

A large dog, which had been for twelve days fed exclusively on animal food, and in which, as a consequence, there had been no sugar permitted to enter the circulation, was experimented upon. The vena porta of the dog was first tied through a narrow opening, in order to avoid the reflux of the hepatic blood under the influence of the atmospheric pressure ; and the animal then having been killed by a section of the medulla oblongata, the abdomen and thorax were freely opened. The blood of the vena porta was collected, and decolorized immediately, by animal charcoal, and filtered. This blood was tested by means of the blue liquor of Fehling, as modified by Quevenne, of which 20 cubic centimètres (7.97420 cubic inches) are decolorized by a single decigramme (1.5434 grains) of glycose, and not the least indication of sugar was observable. The blood of the supra-hepatic veins, decolorized by animal charcoal, and filtered, on the contrary gave fully the reaction of a sugared liquid. It is therefore shown that in an animal subjected to a diet furnishing no sugar to the blood, the blood of the vena porta, arriving at the liver, contains no sugar ; whilst it is found in the blood of the supra-hepatic veins coming out from the liver ; and hence it is proven that at the expense of the albumenoid materials, sugar is generated in the liver.

At the same time a part of the hepatic parenchyma, cut in small pieces, was boiled in water for some minutes, the decoction decolorized by animal charcoal and filtered. The decoction gave very abundantly the reaction of glycose by the reduction of the cupro-potassic liquor. It hence follows that the parenchyma of the liver is the true seat of the glycose secretion.



At the setting of the 29th, M. Oré performed two of the series of experiments proposed by M. Claude Bernard, which confirmed in the most beautiful manner, the results obtained in the experiment which we have above given.

1st. Series.—A large dog was left without food for 15 hours. The professor having by an incision exposed the external jugular vein, passed a ligature around the same; and then having opened the vessel below this ligature, passed a tube into the right auricle, and by means of a suction syringe adapted to the tube, he drew forth blood from the auricle. This blood, decolorized by animal charcoal and filtered, gave the reaction of sugar. And this was to be expected, since a part of the blood contained in the right side of the heart has traversed the liver where sugar is generated.

2d.—The blood extracted from the superior end of the vein, gave no traces of sugar.

3d.—The blood extracted from the carotid artery, did not give any traces of sugar, which proves that in animals which have been deprived of food, there is no sugar in the general circulation, it not being found in either the venous or arterial blood; but that it exists in the blood of the right side of the heart, a part of which blood has traversed the liver. These experiments demonstrate two facts of the highest importance to physiology; 1, the glycogenic function of the liver; 2, the complete destruction of the hepatic sugar by respiration, in animals deprived of food.

2d. Series.—1.—A very large dog partook copiously of meat, only four hours before the lecture.

The blood of the right auricle contained sugar.

2d.—The blood of the jugular vein contained sugar.

3d.—The blood of the carotid artery contained sugar.

Which proves that in an animal the organs of which has actually elaborated the elements of a copious repast, the respiratory function is not capable of totally consuming the sugar furnished by hepatic secretion, or by alimentation.

It has appeared to us important to report these experiments, which support discoveries which are still discussed by some physiologists.

ART. II.—*M. Trousseau on the Bronzed Disease of Addison. L'Union Médicale*; Aug. 7, 1856. Translated by M. MORTON DOWLER, New Orleans.

It happens that physicians, who hardly render justice to their confrères sometimes, notwithstanding, as a matter of convenience, and at others indeed, as a matter of equity—unfortunately too rare—apply to certain diseases the names of their discoverers. Thus, during the last century, a form of disease of the vertebral column, characterized by the presence of tubercles, caries, softening of the vertebræ, abscess, paraplegia, and gibbosity, which we call by the name of the vertebral caries, has received the name of Pott; and the name, *Pott's Disease*, still remains. This name is a testimonial of gratitude, rendered to an excellent Surgeon, who was the first to call the attention of the profession to this affection.

The same spirit, in our own time, has been displayed towards Dr. Bright, who has so admirably described a disease entirely new; not indeed new in its existence, but new in relation to previous knowledge—a disease to which he gave in its various forms, the name of *Chronic Albuminuria*, and to which has been given the name of *Bright's Disease*, a name which in the fact of its being a testimonial of the public gratitude, is a name which is most appropriate.

For my own part, I regret that the name of *Corrigan's Disease* is not applied to the insufficiency of the semilunar valves of the aorta, and also that what is called endocarditis, has not received the name of *Bowilland's Disease*. This is to be regretted, and to designate these diseases by any names other than those of the discoverers is rank injustice. To day I shall apply to the disease which we have at No. 5, (St. Agnes,) the name of the discoverer of the disease, Addison, an English physician, and Chief Physician to Guy's Hospital, London. The disease which he has been the first to describe, under the name of the *bronze disease*, from the fact of its rendering the skin *bronze colored*, I shall designate by the name of *Addison's Disease*, on the same principle that we call *chronic albuminuria*, *Bright's Disease*, and that we ought to call endocarditis by the name of *Bowilland's Disease*. Addison is one of Bright's colleagues and collaborators, and has been known for twenty years, from the contributions which he has put forth in various medical publications, and particularly by his observations confirmative of the admirable researches of Bright. In the course of his hospital practice he was many times struck at the very strange hue which manifested itself in certain individuals,—

a hue resembling bronze, and which exhibited itself in a special manner on the hands, penis, scrotum, at the bend of the thighs, and the arm-pits,—a disease which at first he did not understand, but which from the fact that it afforded no instance of recovery, was carefully studied by him, in its anatomical character. Investigating, as he was accustomed to do, the lesions of the kidneys, and looking to these organs for an explanation of a condition in which anæmia appeared to exist, he discovered that all of the patients exhibited *lesions of the supra-renal capsules*. He was early struck with this singular co-incidence, and it appeared to him, that in the first subject in which he discovered these lesions, there was afforded him a key to this disease. He published, during the course of last year, twelve cases of the *bronze disease*, in which post-mortem examinations were made, and in every case was found lesion of the supra-renal capsules. He did not deem himself justifiable in saying that the *bronze disease* is the necessary consequence of the lesions of the supra-renal capsules, any more than a rational physician would have the right to say that the putrid fever is the consequence of the lesion of the glands of peyer, or that variola is the consequence of pustules of the skin, or that intermittent fever is the consequence of lesions of the spleen; but that there is here presented a specific anatomical condition, which enabled him to recognize this form of anæmia, amongst other anæmias.—This is the anæmia, and this the general disease, in which there will be found lesions of the supra-renal capsules, without the pretence that these lesions are the cause of the disease.

Around him, his hospital colleagues have pushed their inquiries in the same path, and *Addison's Disease*, which was only during last year first spoken of, has been recognized over and over again, and invariably with the characteristic lesions of the supra-renal capsules. To day in our service there is presented a man who is affected with this same disease, which I shall endeavor to describe to you, first, from the clinical exemplification before you, and, secondly, by resorting to the description given of the disease by Addison—a description which you may again find in a remarkable analysis published recently by M. Lasègue, in the *Archives de Médecine*.

This man is 30 years old, and is coachman to the Minister of the Interior. His employment is rude enough; but infinitely less so than that of the ordinary coachman, or omnibus driver; than that of one who is exposed on his seat, from morning till night, to all intemperatures of the weather, badly clad, and poorly nourished, as is very often the case. This



patient was then in a very favorable relative condition for a coachman, well paid, well fed, well clad, drawn by his horses ; but has not enjoyed all the sleep he could have desired during the last four or five months, and in the mean time he has begun to loose flesh. He tells us that he has lost more than *three-fourths* of his weight, which means in allowing for exaggeration, that he was fat and that now he is lean. He has wasted singularly, so as to alarm his family, and to be alarmed himself. Then he perceived, during the last three months, that his hands have become black. He washed them over and over again, and the coloration has not disappeared. I ordered him yesterday to bathe in a solution of the sub-carbonate of soda ; but his hands are a little blacker than they were before.

He perceived, as his hands became black, that his body took the brown, smoky tint of the mulatto. He perceived that the mucous membrane of the lips became black, like those of certain dogs, that on his body different parts became black, and that the skin looked dirty. When we examined him, we found his nails of an extraordinary whiteness,—a proof that the tint of his hands was not owing to soiling of the epidermis. His nails were as white as those of anæmatose persons, whilst his hands have almost the color of those of the negro, and in the like manner the penis, the scrotum, as well as the folds of the groin, and folds of the arm. The areola of the nipple is not colored in any extraordinary manner. Nevertheless it has been observed that the areola in this disease has taken, in many cases, an excessively deep tint, resembling the color which is seen in cases of pregnant women, near the close of the gestation.

This man tells us that he is debilitated in the extreme, and that he cannot walk without his legs bending under him. Under auscultation we find the bellows sound in the vessels, as is found in persons laboring under anæmia. The first sound of the heart, towards the base gives an extremely mild bellows sound, resembling that which is heard in chloretic anæmic patients. The lungs and stomach are in good condition ; the liver, and spleen without hypertrophy ; no appreciable lesion ; this patient has neither albumen nor glyose in the urine, (bear this fact in mind.) We have examined the urine twice already. The patient tells us that from time to time there are felt, deep in his flanks, rheumatismal pains—pains which appear, cease, reappear, and cease anew ; not, however fixed and well defined, though I have turned my attention spe-

cially to this point, as I hoped to find the lesion of the supra-renal capsules, characterized by a fixed and well defined local pain.

This man, therefore, has the symptoms associated by Addison with the *bronzed disease*.

Let us now return to the analysis of the researches of Addison, and directly compare all the symptoms showing themselves in this patient, with those that Addison has reported in his work.

You are aware, in the mean time, that we know nothing of the function of the supra-renal capsules. These bodies, and the thymus gland, are largely developed in the foetus, and as soon as the egg is hatched, the supra-renal capsules, as well as the thymus, become atrophied. There are no excretory ducts to these bodies. They possess a glandular structure, but we have no knowledge of the purpose they serve in the economy. What we do know is, that the supra-renal capsules sometimes undergo serious alterations, like all the other organs, that they are subject to cysts, apoplectic hæmorrhagies, tubercle, and the various forms of cancer. As to the physiological action of these organs, we know nothing whatever.

It is true that in another form of anæmia, there is another organ which is very gravely affected ; to wit, the spleen, an organ with the functions of which we are equally unacquainted. It also is without any excretory canal. We know not for what purpose this organ exists. We know that its lesions are coincident with grave disorders of the system ; but physiologically, we know not what the spleen is good for ; and we shall probably remain in ignorance on this point, for a long time to come.

Touching the supra-renal capsules a very curious fact has been determined, which is that they are much more voluminous in negroes than in whites. Thus it might seem, but we shall not venture too far on this point—that they might possibly not be without some relation to the secretion of pigment. Negroes are more rich in pigment than whites.—They have at least a very special pigment. In negroes it has been remarked that there is a greater development of the supra-renal capsules. In the infant at its mother's breast, there is very little pigment. We do not see what purpose these organs can serve, which were they destined to this purpose would secrete this matter largely. We do not see that the new-born child is blacker than the adult ; but the contrary. Consequently to this kind of physiological reasoning we must attach a very slight importance. But when we see a disease, in which, as in the

*bronzed disease of Addison*, there are pigmentary modifications, and that at the same time we find the bodies in question much more developed in negroes than in whites, we are induced to suggest the existence of some kind of relation between these bodies, and the pigmentary secretions. But I say no more on this head, and I wish you to bear in mind that those who have referred to this point, have not been enabled to put forth anything beyond the suggestion which I have here made, and that they have displayed the same reserve.

I have already told you that Addison, has for a long time, devoted himself to researches on what is called essential anæmia. He found what we have found, that in certain anæmias there is a predominance of white globules,—globules that to a certain extent take on the form of pus globules, and thus constituting what has been called *leucæmia*, or *leucocythæmia*; that in such case it is the spleen which is ordinarily affected; that in other anæmias, the liver or lymphatic ganglions seemed to be specially involved, and that in others the supra-renal capsules were affected; but that in those in which were found lesions of the supra-renal capsules, there was invariably found a bronzed coloration; whilst in splenic anæmia, there appeared to Addison, only a sub-icteric tint; and you all know that this special coloration is not either that of chlorosis, or of anæmia from loss of blood; but that is is an intermediary coloration, between cancer and anæmia. Addison found a color different from all these, in which the skin put on the bronzed smoky tint, analogous to the skin of the mulatto,—a coloration, as I have remarked, appearing particularly on the hands, neck, penis, scrotum, and on the areola, and under the arms.

But, at the same time, he remarked in a great number of these patients, spots of *vitiligo*. Now those of you who have studied diseases of the skin at the Hospital of St. Louis, must have seen a great number of individuals, both in the wards, and as applicants for relief, laboring under *vitiligo*, another very singular species of cachexia, in which the patients are affected with pallor, have the bellows-sound of the vessels, and in place of having black spots on the skin, have portions of the skin absolutely and completely decolorized, trenching by the dull whiteness on the rest of the skin. A curious thing in Addison's Disease is, that you will find, in a great number of individuals, spots of *vitiligo* mixing themselves with the bronzed spots, as if there had been a displacement of pigment, which abandoned one point of the skin, to fix itself in another.



Now, that attention has been awakened by Addison, and now that he has pointed out to us the coloration that exists,—or rather the parallel march which is sometimes observed,—between *vittiligo* and the *bronze disease*, it is possible that in investigating in the cases of individuals attacked with *vittiligo*, the condition of the supra-renal capsules, there will be found lesions of these bodies, similar to those observed in *Addison's Disease*, and then it will be shown that *vittiligo* is nothing else than one of the modifications of the *bronzed disease*.

As to the functional symptoms in *vittiligo*, we observe a general lassitude, an extreme debility, a decay which always increases; a state of anæmia characterized by pallor of the tissues, which are not blackened, and as a consequence, by the bellows-sound in the vessels, as in the most inveterate anæmias. In the colorations, there is one which is not described by Addison, and that is found in the mucous membranes. In our patient, on raising the lips, we perceive that they are of a black tinge, resembling, in this respect the race of dogs, that have the throat of a black color. This is a very strange thing; and I call your attention to it.

And what of the blood? I have drawn blood from this man, not indeed to such extent as to in any manner modify the functions of his body, which would be highly censurable. To subject any one to a copious blood-letting, in order to determine his condition, by the blood, as it shows itself in the bowl, is a thing which I have never permitted; and that I can never permit. I drew a few grammes of blood, by means of a cup, which can produce no effect on his condition. I had the blood carried to M. Robin. He found nothing anomalous in the blood, save only a diminution of the red globules, as we find in subjects attacked with ordinary anæmia.

An examination of the urine led to the detection of some pus globules; but in a quantity, which as M. Robin says, is not sufficient to constitute a pathological condition.

This man fell into a profound languor; but strange to tell, he has a good appetite, except, as is observed in certain persons attacked with cancer, he has a distaste for meats.

We then say that chlorotic girls, and individuals anæmic from loss of blood, may also have an obvious distaste for meats which may notwithstanding be proper diet for them, and may on the contrary, have an exaggerated appetite for acids, unripe fruit and vegetables, especially those possessing ascerbity of taste. Consequently this disgust of meat, ob-

served in our patient, is nothing exceptional in anæmia. I refer to this from the fact that it has not been pointed out by Addison.

Touching the prognosis, Addison and the physicians who have written after him, declare that in all their experience there has been no instance of recovery from this most singular affection. It is true that in the *leucæmia*, which accompanies hypertrophy of the spleen, we see the patients all, or almost all die. It is true that in the most of the anæmias, we see the patients die except when these anæmias have arisen under the influence of bad diet, loss of blood, and the toxical effects of paludal miasms ; or when these affections have been of recent origin.—But in *Addison's Disease*, up to the present time, not only has there not resulted a single cure, but we see no other result than death's doings.—Some patients may improve in strength, though retaining their characteristic bronzed color ; and they might be considered cured if they had really recovered the integrity of their health. But this does not take place ; the disease is always progressive, and the patients decline, and have always thus far succumbed.

And what are the lesions discovered ? In the twelve cases which Addison has published, (and in some others which have been published by his colleagues in England,) there have been found cysts in the supra-renal capsules in some ; in others apoplexies ; in others tubercle ; in others scirrhus indurations of the capsules ; in others cancer, and sometimes many of these lesions existing at once ; and never, in any case, have the observers failed to find in this disease, lesions to a greater or less degree, in the supra-renal capsules.

But as Addison is a man of good faith, he informs us, at the same time that his attention has been directed for many years to the lesions of the kidneys and the supra-renal capsules ; that his memoir, published in 1855, has necessarily been composed of researches extending farther back ; that he found in cases of individuals, who during life had never presented any symptoms of anæmia and that have succumbed to both acute and chronic diseases in which there existed nothing which corresponded to the *bronzed disease*, there were nevertheless, sometimes found very grave lesions of the supra-renal capsules. Consequently he has expressed himself thus : *There is never any case of the bronzed disease without lesions of the supra-renal capsules, but there are lesions of the supra-renal capsules without the bronzed disease.*

In the catalogue of chronic maladies, this affection stands as a new disease—a *specific disease*, and as such we must accept it. Here we have

a species of anæmia amongst the anæmias ; as the disease of Bright is a species amongst the anæmias ; and you will realize what immense service these men have rendered, who have thus shown the different species of chronic, as has been shown in acute diseases. When we began our medical studies, about thirty-eight years since, how great was our embarrassment in the presence of dropsies ! How could we know anything of the disease, when the works of Bouilland on the obliteration of the veins were not in existence ? When those of Bright did not exist ? When the admirable works which have come to light during the last twenty-five years on the diseases of the heart did not exist ? When the chronic affections, such as *leucæmia* and *Addison's Disease* were unknown ? We knew, indeed, that there were hypertrophied and cancerous livers ; we knew there were *cirrhotics* (for cirrhosis was known)—we knew that there were found obliterations of the vena porta, and ascites, resulting as the consequence of various lesions. But when we were compelled to exclude these lesions in the case of an individual affected with general anasarca, what could we say before the appearance of the immortal works of Bright ? How could we distinguish that œdematous which is so cruelly incurable, or so nearly incurable, from the leucophlegmatous which occurs from an attack of cold, or as a consequence of intermittent fevers, readily curable, as they are, by cinchona, or indeed without medication. How are we to distinguish, from others, the curable dropsies, as that of this woman, that by eight days treatment only, we have been enabled to cure a case of a dropsy ? How, before the researches of Bright, could anything of this treatment be understood ? We were groping in the darkness of empiricism, not having the means of distinguishing the different species of the disease. You see on the one hand, an affection called *Bright's disease*, which accompanies one dropsy, which scarcely admits of cure, and on the other hand, we may witness twenty individuals, who have been affected with quartan fevers, fall into anæmia, and dropsy ; you give cinchona, digitalis, and iron, and in one month, the patients are cured.

You see then how important it is for you that such men as Bright, Bouilland, and Addison, are conducting researches by which you are enabled to know in relation to chronic diseases, those affections to which you may hopefully apply the resources of the healing art, and those to which you know nothing fitting to apply. Under these circumstances, when you cure, you know what you have cured. You know what species of medication you have made, and you no longer apply your reme-



dies empirically ; and when you do not cure, you know what you have not cured.

*Remarks by the Translator.*—We have been led to produce the foregoing very interesting lecture of M. Trousseau in English, from the persuasion that every source of information on the subject on which it treats, will receive a hearty welcome at the hands of our readers. The recent researches of Dr. Addison, in which the *bronzed disease* of the skin has been found to be invariably associated with the lesions of the supra-renal capsules, cannot fail to make a strong impression on the medical mind, and to provoke inquiry and investigation on many points in physiology, pathology, and therapeutics on which little is known. The enlightened physician though daily making application of the known in the practice of his profession, is constantly encountering the dark unknown. Physiology, which has never given him a perfect knowledge of any of the vital functions, has even totally failed to teach him for what purpose certain organs of the body, as the thymus gland, the spleen, the supra-renal capsules, etc., are located in the organism. Numerous are the diseases of which not only has pathology failed to teach us the *point de départ*, between the eventual seat of the morbid condition ; and in a very large class of maladies, the science of therapeutics has never yet taught the first principles of cure. It is reserved to such men as Addison, to augment the resources of these sciences and to open out a hopeful future to medicine. A peculiar form of anæmia, giving rise to a *bronze color of the skin*, had long been observed to exist, and its invariably fatal character had been observed ; but its pathology was wholly unknown. The researches of Addison have not only apparently fixed that source in organs of the body, the normal functions of which are unknown. If observation and experiment have failed to discern the physiological purposes of the supra-renal capsules, surely the pathological capabilities of these bodies appear to be clearly indicated in the rise and progress of the *Disease of Addison*. For all that is known pathology may ultimately lead us to an acquaintance with their normal functions, their importance being thus clearly indicated by the extraordinary and fatal character of the disease associated with the lesions of these bodies. In like manner the intimate connection of lencothæmia with a morbid condition of the spleen, implying as it does a pervading normal influence on the part of that organ on the economy, may become the means through which its physiology may be elucidated. Such admirable pathological researches as those of Addison cannot therefore fail to contribute largely to the advancement of physiology.

Whether we are to consider *the bronze disease of Addison*, as originating from the attendant lesions of the supra-renal capsules, which have been invariably found on dissection, or whether we are to regard this disease as a condition merely concurrent and coincident with these lesions, without bearing the relation of cause and effect, the discovery made by this physician, constitutes one of the most remarkable contributions to pathology, which has been made during the present century ; and it must give him a permanent and historical name in medical science.

The hues of the skin in the various anæmias form a subject worthy of serious study, and form striking indications of the several diseases. The clear dazzling white of the skin and azure white of the sclerotica, as is seen in phthisis, the dull greenish white of chlorosis, the pale yellowish white resulting from intermittent, the lemon-hued white of cancer, the blotched and mottled white in leucorrhœa, etc., etc., are almost pathognomonic of the different forms of disease.

We subjoin the following from "Braithwaite's Retrospect," part 33d, July, 1856.

*On the connexion between Bronzed Skin and disease of the Supra-Renal Capsules ;* by DR. ADDISON, Senior Physician to Guy's Hospital. (Reported by J. Hutchinson, Esq.)

THE Senior Physician of Guy's Hospital has recently added to the list of benefits which medical science had already received at his hands, by the publication of a monograph on the "Diseases of the Supra-renal Capsules." In this work, Dr. Addison, as probably most of our readers are aware, advances the opinion, that destructive disease of these hitherto little-regarded organs is attended by most serious constitutional mischief. His views, which are, indeed, the simple expression of his clinical experience, and are supported by 11 carefully narrated cases, may be concisely expressed as follows:—1. That a peculiar browning or bronzing of the skin is indicative of disease of the supra-renal capsules. 2. That it may depend on any disease which affects the disorganization of these bodies, e. g. cancer, tubercle, abscess. 3. That patients suffering from this symptom fall gradually, and without obvious cause, into a peculiar form of debility, which results almost invariably in death within a limited period. 4. This form of debility is rarely attended by much emaciation, and the subject of it, although with much flabbiness of tissue, retains throughout a general bulkiness of frame which contrasts strongly with his extreme feebleness. 5. That, usually, no other important visceral complication supervenes.

Should these conclusions prove to be correct, it will be seen that we have an important and well characterized disease added to the nosological list. Here is a train of peculiar symptoms and events originating

in a morbid state of an organ of the pathology of which, hitherto, nothing has been known, and whose functions, whatever they may be, have been deemed of but little importance. Dr. Addison's facts are as yet only 11 in number, and although they all support the conclusions indicated, yet that they are not sufficient data to set at rest so important a question, few, we suspect, would be found more willing to admit than himself.

[From the great number of cases which have been well marked and well observed, we may assume that the theory is now well grounded. The supposed exceptional cases which have been recorded only to prove the validity of the connexion between them.]

*Symptoms attending Diseases of the Supra-renal Capsules.*—1. *Change of colour of the skin.*—The term "bronzing" probably conveys as good an idea of the exact character of the appearance assumed by the skin in this disease as could well be given. It resembles strikingly the colour of a bronzed statue from which the gloss has been rubbed off. Pressure has no effect in causing its diminution. It seems as a rule to commence first in patches with ill-defined borders, on those parts most exposed to the sun and to friction, the neck, the back of the hands, the fronts of the thighs, the arms, &c. Around the nipple, and in other parts where pigment naturally abounds, it is generally well marked, while others, possessing little or no pigment originally, as the palms of the hands, the ungual matrices, &c., remain as pale as ever. This tendency to show itself in patches, is strongly in support of the belief that the change is really one of deposit of pigment; which derives further confirmation from the circumstance, that in not a few cases the punctate or even patchy deposit of black matter was observed in the mucous membrane of the mouth, and in the serous investment of the abdominal viscera. The conjunctiva usually remains pale and pearly, a condition which well distinguishes true bronzing from the various states of jaundice. The changed colour of skin, although most important for purposes of diagnosis, is probably of very minor consequence among the other departures from health which attend renal capsular disease.

2. *Debility.*—Next to the bronzing of the integument the extreme and peculiar feebleness manifested appears to be the most striking of the symptoms. Without any evidence of thoracic disease, without any great loss of flesh, the patient becomes liable to faintings, loses energy, is unable to exert either body or mind, and in short, appears to be on the point of death from sheer weakness. In almost all the cases comprised in the Table this state of things was very well marked. In cases 14 and 15, however the loss of strength had not proceeded *pari passu* with the change in the tint of the skin, and appears to have attracted attention only for a few days prior to the fatal event.

3. *Emaciation.*—That there has generally been observed a want of correspondence between the extreme debility and the degree of emaciation coincident with it, seems evident. Several of the patients are described as having remained muscular and fat up to the very last. In



almost all, however, there had been some loss of flesh, and in many it had even been considerable. Dr. Addison's observation, that flabbiness of the solids rather than actual wasting is characteristic of the condition seems true to the majority of cases.

4. *Anæmia*.—In almost all cases, there would seem to have been present great deprivation of the colored constituents of blood, as manifested by the pallor of those parts not involved in bronzing, the general flabbiness of the muscles, the pearly state of the conjunctiva, &c. In two only (cases 3 and 13) was the blood examined with the microscope, and in both those it was found to be loaded with corpuscles. To the impoverished state of the blood is, no doubt, to be referred the breathlessness on exertion, the debility, the feebleness of the heart's action, and perhaps also the irritability of the stomach.

5. *The pulse*.—With a few exceptions, in which it became rapid, the pulse has generally been of but average frequency, and peculiar only in its extreme softness and compressibility.

6. *The tongue*.—It does not appear that any state of the tongue other than that common to most conditions of debility has been observed in connexion with this disease.

7. *Dyspepsia*.—In almost all cases prior to death, and in many for protracted periods, great irritability of the stomach was present. In most there was loss of appetite, more or less persistent nausea, and occasional vomiting, with pain and sense of sinking at the epigastrium. In the majority, it would seem that the bowels have been costive rather than otherwise, while, in a few, attacks of diarrhœa had occurred. In several instances the patients had been liable to "biliousness." Much more detailed observations as to the symptoms of indigestion present are desirable.

8. *The Urine*.—The urine was tested for albumen in many of the cases, and in some for sugar; but in no instance was any important departure from its normal constitution observed.

9. *Lumbar pain*.—Aching, more or less severe, in the back or loins, was a symptom present in a considerable proportion of the cases. In two of these there was, however, disease of the vertebræ, by which it might have been occasioned; and the evidence respecting it is not such as to induce us to attach much importance to its signification.

10. *Nervous Symptoms, Convulsions, &c.*—Symptoms referable to disorder of the cerebro-spinal functions occurred in several of the cases. In three, epileptiform convulsions preceded death. In one, failure of memory, and remarkable change in temper, was observed; and in a second, numbness of the fingers, legs, and the tip of the tongue, had been present. In one, the man had suffered from tic douloureux.

11. *Odor of the Body*.—In two cases, both under care at the Brighton Hospital, it was noticed that a peculiarly disagreeable odor was exhaled from the patient's body. In one this was present for a few weeks, and in the other only for a few days prior to death. The pheno-

menon is not mentioned in the reports of any other case in the series, and Dr. Addison informs us that it was not noticed in any case under his observation.

Such, then, appear to be the more important of the train of symptoms observed in connexion with this disease. It is, necessarily, as yet, from the paucity of facts, meagre and inexact, but the general features of the group are, nevertheless, well characterized, and would seem to have been present with tolerable uniformity.

*Mode of death.*—In only a small proportion of the cases included in our series has the exact mode of death been recorded. In several the death is stated to have been that of exhaustion. In some, a peculiar form of collapse, without obvious cause, preceded it, while, in two or three others, this collapse followed very slight, and usually inefficient, causes, such, for instance, as the action of an aperient dose. In one the collapse was so extreme, and had supervened so suddenly, that poisoning was suspected. In one the patient died of pericarditis with pneumonia; and in another, a torpid condition resembling that of typhus preceded death. In three convulsions had been present. Speaking generally, we may say that the phenomena attending death are those of utter prostration of the vital powers, not unfrequently complicated by disturbance of the nervous functions.

*Diagnosis.*—The combination of a bronzed state of the skin with great systemic debility may be held indicative of disease of the suprarenal capsules; and the more marked these conditions are, the more positively may the opinion be formed. A differential diagnosis may sometimes be requisite, however, as regards the following diseases: 1. *Jaundice.*—In some states of chronic jaundice the skin may be brown rather than yellow, and great vital depression may exist. Here, however, the conjunctiva and the matrices of the nails would, by their discoloured state, prevent the possibility of deception. The tint in jaundice is also a diffused one, and does not occur in patches, as in true bronzing. 2. *Browning from exposure to sun, &c.*—In these, the examination of parts protected by the clothes would generally be sufficient to prevent error. 3. *Pityriasis versicolor.*—The patches of the pityriasis versicolor sometimes remarkably resemble those of the bronzed skin. Their limitation to the abdomen and chest, their defined outline, their furfuraceous surface, the slight itching which attends them, their contagious character, and above all, the microscopic examination of the cuticle, furnish, however, abundant means by which to distinguish between the two. 4. *The diffused brown muddiness of some other cachexia.*—The dark areola round the eye, so often seen in states of disordered menstruation, is in rarer cases found coincident with a loss of healthy tint in the skin generally, which assumes a dirty, sallow, brownish appearance.

This, in exaggerated instances, might be mistaken for bronzing; and, indeed, we are not sure that cases, 21 and 26 in the series are not examples of this mistake having been committed. It would be premature, indeed, to assert that this state may have something to do with

functional, and perhaps transitory, disorders of the organs, upon structural diseases of which the states of more extreme discoloration are found to depend. We have, however, no positive evidence that it does so. In the mean time, it should be borne in mind that in all cases, in which bronzing is to be held as positively indicative of diseased capsules, there ought to be traces of patching and mottling in some parts, and that in proportion as the tint is equally diffused over the whole body is the diagnosis doubtful.

*Prognosis and treatment.*—We have as yet no reason for believing that in cases of true bronzing of the skin, the physician can do other than give the most unfavourable prognosis. No recovery has yet been recorded, nor, indeed, has even temporary improvement under treatment been very marked in any case. After such an avowal it may, perhaps, seem superfluous to speak of treatment, since in our search for principles to guide us in it, we can avail ourselves only of that very delusive light which pathology furnishes. There seems, however, reason for believing, that the morbid changes to which the supra-renal bodies are liable are most of them more or less closely allied to inflammation; and from this fact one might, perhaps, be justified in selecting remedies from the class of drugs known to possess influence over that process. The exhibition of a course of mercury (in very small doses,) or the use of the iodide of potassium, the patients strength being meanwhile supported by a nutritious but non-stimulating diet, would probably be the most rational practice which could be suggested for a case of bronzed skin. As the change in color is, however, only produced, in all probability, after the organic disease has considerably advanced, there would not, it is to be feared, be much to be hoped for in the way of restoration of function.

*Morbid Anatomy.*—The cases recorded show examples of the following conditions of disease in the supra-renal bodies. A remarkable symmetry of disease appears to have existed in all excepting the cases of cancer.

1. Acute and recent inflammation ending in abscess. 2. Atrophy with fibro-calcareous concretions. This condition appears to have been present in seven cases. In some of them cysts existed, and in several a fluid matter resembling pus was contained in the cysts, and bathed the solid fibro-calcareous concretions. These changes probably result from inflammation of a chronic character. The complete disorganization of the viscus is usually effected, and in all cases recorded both glands were involved. 3. The conversion of the viscus into a sort of fibroid structure, with great enlargement and induration. This occurred in two of the cases, and in both all traces of healthy tissue was lost. 4. The deposit of tubercle. In three instances masses of deposit resembling tubercle were observed, and, coincidentally, great enlargement of the organ and loss of normal texture. In two the deposit existed in both organs, and in one there was no tubercle in other viscera. It may be doubted whether the deposit is not really more nearly allied to some form of fibrinous



effusion, the result of inflammation, than to true tubercle. 5. *Cancer*.—In six cases the deposit of cancer has been observed. In all it was secondary to the same disease in other organs. In four it affected but one organ, and in two both were involved. In but one was disorganization of both effected.

*Theory of the disease*.—The observations of Addison, although they may not as yet have resulted in discovery of the function of the supra-renal bodies, have certainly proved them to possess some very important one. We see their destruction followed in every case by extreme constitutional disorder, loss of strength, depravation of the blood, failure of digestive power, a peculiar tendency to pigmentary deposit, and finally, by the death of the patient, in spite of all measures for his relief. By whatever morbid change that destruction has been effected, whether cancer, tubercle, or inflammation, the same sequences appear to result, and it would seem that we are fairly authorized in classing them as consequences on it, and not as mere coincident effects of some other cause. Taking these facts in connection with the observations of anatomists as to the very large supply of nerves received by the supra-renal bodies, and the great similarity of certain of their so called "gland cells," to those of nerve ganglia, the conjecture that these viscera are in some way very closely associated with the organic nervous system, seems to have much in its favour. Supposing them to exercise a presiding influence over the functional efficiency of some of the viscera of the abdomen, it is easy to see how fatal lesions of health might ensue on their destruction. Dr. Gull has pointed out the close resemblance between the pineal gland and the supra-renal bodies in minute anatomy and also in liability to calcareous deposit, and the idea seems to well merit attention.

We shall venture to conclude this report by a few words on what appear to us as

*Desiderata in the further prosecution of the inquiry*.—1. With regard to the cases of *Bronzed Skin*. It is desirable that in all cases in which any approach to bronzing is observed the detailed notes should be preserved, having especial reference to the following points :—*a*. The degree of discoloration, the parts affected by it, the parts retaining their healthy hue, the state of the mouth, the conjunctiva, &c. *b*. The history of the alteration in color, when it first occurred, &c. *c*. The patient's previous state of health. *d*. The patient's present health as to the emaciation, debility, dyspepsia, symptoms of nervous disorder, &c. *e*. The condition of the excreta. The urine should be carefully examined, and the faeces inspected from time to time. *f*. The state of the blood, both by microscope and chemical analysis. *g*. The presence or absence of any peculiar odor from the patient's body. *h*. The abdomen and thorax should, of course, be submitted to physical exploration, and the exact order of sequence of the various symptoms should be carefully examined into.

2. With regard to the *supra-renal capsules*.—It is desirable that henceforth it should become the practice of pathologists to inspect these organs

in all post-mortems without regard to the cause of death. If appearances suspicious of disease are found they should be minutely described, regard being especially had to the extent to which the natural structure of the viscus has been destroyed. As yet so little familiarity with the very different appearances which the capsules may present in a state of health prevails, even among experienced morbid anatomists, that great caution will be necessary to prevent mistakes. Whenever doubt is felt, the specimens should be submitted to the inspection of some more practised observer—an end which, we may suggest, would be well obtained by bringing them before a meeting of the Pathological Society.

3. In the publishing of cases, it is desirable that much more of detail should be given than has been done in most of those hitherto recorded. More facts are wanted, but these facts must have the stamp of accuracy and exactitude, or they will be comparatively valueless. That the important field of investigation, to which Dr. Addison has attracted the attention of the profession, will be cultivated with zeal, we cannot doubt. Great care, however, as well as zeal, will be requisite.—*Braithwaite's Retro., From Med. Times and Gaz.*

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ART. III.—*Chimie appliquée à la physiologie et à la Thérapeutique*, par M. le Docteur MAILHE. Un vol. in8. de XXXII. 704 pages. Paris, chez VICTOR MASSON.

*Chemistry applied to Physiology and Therapeutics* : By Dr. MAILHE, 1 vol., 8vo. pp. XXXII. 704. Paris, Victor Masson.

An Analysis by Dr. MARTIN MAGRON. Translated from the *Gazette Hebdomadaire de Médecine et de Chirurgie* of August, 1856. By M. MORTON DOWLER, M. D., New Orleans.

No one denies, at the present day, that in order to arrive at the discovery of truth, in the study of any science whatsoever, it is necessary to observe, to experiment, and to reason. The relative value of these modes of investigation, however, is far from being duly understood. Some inquirers following the observations of Schelling, Hegel, Oken, etc., maintain that observation and experiment ought to be resorted to for the sole purpose of confirming reasonings, *à priori*; that God has bestowed on us the power of thinking, and the power of understanding all that He has created; or, in other words, that the human mind contains all the ideas of which the external world is but a *visible realization*; that it is only necessary, as it were, to *look inward*, in order to acquire a knowledge of all nature. It is in this view that these inquirers proclaim, that *to philosophize on nature is to create nature*.

Other inquirers, disciples of Cuvier, maintain that observation and experiment ought to precede all reasonings ; that the latter should not be called into requisition for any other purpose than to the classifications and co-ordination of the accumulated facts ; that all *systemization*, which exceed the boundaries of known facts, necessarily leads to error, and should for that reason be rigidly proscribed. Distrusting all hypothesis, this school enjoins observation without preconceived ideas, and recognizes nothing as trust-worthy, which goes beyond the limits of material demonstration.

Between these two opposite schools, stands a third, that imbued with the genius of a Goethe, a Lamarck, a Saint-Hilaire, holds at the highest rate the facts resulting from observation and experience ; but that does not stop short at the classification and co-ordination of these facts.

In this school the latter are *systematized*, and the disciples are not content to simply *know*, but it enters into their purpose to *foresee*, and to grasp the idea which presided at the creation of things. In order to arrive at these objects, this school not only turns to account the facts, after the manner of the school of Cuvier, but it resorts to the conceptions of the mind, after the manner of that of Schelling. The disciples of this third school observed with *preconceived*, but not with *predetermined* ideas. In experimenting on this basis it is not sought to demonstrate these preconceived opinions, but to determine their soundness. They do not award to facts an *absolute importance*. They fully realize how difficult it is to establish a fact which shall appear true otherwise than within the limits of our present knowledge and our actual means of investigation ; that very often, indeed, when our knowledge increases, and when the means of investigation becomes more extended, facts which bore the appearance of being amongst the very best established, have been demonstrated to be false. Could there be anything more certain in the eyes of physiologists than the facts resulting from the experiments of M. Bischoff on the spinal and pneumogastric nerves, before these facts were overturned by M. Claude Bernard ? Was it not on facts that M. Longet based his theory, touching the functions of the columns of the spinal marrow ?— Was it not on facts that M. Brown-Séquard constructed a different theory ? And why have M. Brown and M. Bernard arrived at results which more nearly approximate the truth than those who have preceded them ? It results from the fact, that they have had at their disposal improved means of experimentation, and because indeed they followed in the track of former observers. What errors would we not commit if



others had not committed them before us ; if errors had not, as it were, been removed from our path ! And are we justified in concluding that science marks its progress by the destruction of theories which are apparently the best established ? Was there anything in physics more true than the *law of Mariotte*. But the researches of M. Regnault, however, demonstrated that it is not absolutely exact.

The disciples of the school of Geoffroy Saint-Hilaire, appear to us in comparison to those of the school of Cuvier, what the architect is to the builder ; the former school conceiving the general plan, the combination of proportions, and realizing within the limits of the powers bestowed, the ideas which have been conceived.

M. Mailhe appears to us to belong to the school of Geoffroy Saint-Hilaire. Indeed a dominant idea is seen in all the researches which he has undertaken during more than twenty years,—an idea that was ridiculed at first, afterwards combatted, and which is now advocated by the greatest number of physiologists,—an idea which must necessarily produce the most eminent results, and which has lead, and must in future, to the greatest progress in rational phamaceutics and therapeutics.

The idea, to which we allude, is definitely announced at page 8 of the book designated at the head of this article, and, of which we propose to make an analysis, and is as follows : The *existence* of organized beings consists in an interrupted series of *chemical réactions*. And here we felicitate M. Mailhe on having openly displayed his flag, and on having avoided dealing in equivocal expressions, which so often hold the reader in suspense ; and it is from the fact that there is no equivocation in his language, that we shall not take the trouble of refuting the assertions of those who have reproached the author with the charge of maintaining that *all the phenomena which are exhibited in living beings*, are chemical phenomena. He has never given countenance to such a position. Transmisssion and perception of impressions, etc., are evidently not, in themselves, *chemical acts* ; but the material state which gives to the organs the power of transmitting and of pereceiving, is essentially related to chemical action, because it is by chemical action, in nutrition, by which the divers modes of organization are brought about. Doubtless *all the phenomena*, the union of which constitutes digestion, respiration, etc., are not chemical phenomena, but what are the principal amongst them, that is to say, the conversion of aliments into *chyme*, the transformation of black to red blood, other than acts subject to the laws of chemistry ?—Without this conversion of aliments into chyme, without this transfor-

mation of black, into red blood, life is impossible ; it is then with reason that he says, the existence of the organized beings, consists in an uninterrupted series of chemical reactions.

There is not now, as formerly, any necessity for the accumulation of facts and experiments to show that the materials which enter into the composition of living beings are not exempt from the ordinary laws of nature ; that they are ponderable, porous, extended, compressible, like inanimate matter. And can it be otherwise since they are all composed of the same elements ? And nevertheless, there are some men who occupy high places in science, and invested with the highest titles in the same, who indirectly disavow all application of the physical, mechanical, and chemical sciences to the explanation of the phenomena of life ; who go so far as to recommend that the latter, should be studied by an entirely different method, from that which is recommendable in the study of inanimate matter. Certainly we shall not compare these individuals, as has been done by M. Michelotti, to the fox who having lost his tail, proposed in open council to his confrères to disembarass themselves of the inconvenient appendage ; for there are no physicians at the present day, who have not to a greater or less extent a knowledge of chemistry, physics, etc. We must therefore look for the cause of this opposition to scientific applications, to other sources than ignorance. We should rather be inclined to assign the following causes :

One of the sources of opposition on the part of our adversaries has its origin in the recollection of the little real utility which formerly resulted in the application of the science, at the hands of the iatro-chemists. We readily admit that the ancients were wrong in applying to the explanation of the phenomena of life, a science then in its infancy ; but we also fully realize the fact that there is a wide rumour between the chemistry of Sylvius, Glauber, Lémery, etc., and the chemistry of Dumas, Pelouze, Berzelius, Liebig, and others ; and that which was one hundred years ago attempted without success may now be successfully effected.

A second source of opposition arises from applications which have recently been made without due discernment, and by observers of exclusive views, whose knowledge have not corresponded to their intentions. But it will not be difficult to perceive that side by side with these efforts for which the authors alone are responsible, there are others which with the most precise scientific research, and with the most profound sagacity, have exhibited complete application of physics, chemistry, mathematics,

etc., in explanation of a great number of phenomena pertaining to the living body. Let any one who wishes to form a well-grounded opinion, read the memoirs of Müller, on the Senses, the two brothers Weber, on Locomotion, the publications lately made by M. Guillet on the Motions of the Heart, those of M. Reynoso on Respiration, and in an especial manner, read with attention the book of M. Mailhe, etc., etc. Has not an illustrious physiologist shown that putrefaction produces on the liver an effect which is identical with that which is produced in other conditions by the nervous system? We know that certain experiments, which have attracted some attention, have been brought forward to show that the chemical reactions which take place in the blood-vessels, are different from those which take place in vessels which are inanimate. The ferrocyanuret of potassium and a salt of iron, were injected into the blood, and it was found that the combination did not take place in *the vessels*, but that it took place as soon as by transudation, the two reagents encountered each other in the *stomach*. But was it not chemistry which *enabled the fact to be foreseen*? We know, indeed, that these two salts will not combine in an alkaline medium; but that on the contrary they do so very readily in a medium which is acid. But the blood is alkaline, and the fluids of the stomach are acid, and what has passed under these circumstances, is quite identical with what takes place in inanimate vessels; and we could cite other similar examples.

A third source of the repugnance which certain persons have shown to the recognition of the legitimate rights of the physical sciences in the premises, consists in the difficulties which these sciences present, their wide extent, and the patience, and the sagacity which is necessary in order to arrive at results which are either true or probable. It is much more easy when the explanation of a given phenomenon becomes a source of embarrassment, to recognize the intervention of a something more or less phantastic, as having been invested by the Creator with the power of producing the phenomenon, indeed, to refer the same to the direct and inscrutable intervention of the Creator Himself,—a much easier method than a patient laborious analysis, in which is brought into requisition the knowledge acquired by the labor of years.

And in the fourth place, the adversaries of the views which we seek to establish, imagine that they have found an unanswerable argument in the supposed absolute impossibility of explaining certain acts called *vital*, through the laws which govern inanimate matter. But, to begin, does it follow from the fact that some of these phenomena cannot be at



present thus explained, that the same is true of all? Let us descend to simple first principles: Do chemists *explain* the properties of iron? Not at all—they merely proclaim their existence, and nothing more.—Is it more astonishing that a nervous cord should receive an impression, than that a piece of copper should conduct electricity? If we know not why the nervous cord should receive impressions, neither do we know *why* the piece of copper conducts electricity. We know the conditions which modify this property of this piece of copper, from the fact that they have for a long time been investigated, and we do not hesitate to say that we shall know the conditions which modify the action of the nervous system, when they shall have become the subject of a sufficiently prolonged study.

In fine we recapitulate our views. There occur in living beings phenomena which are indeed different from those which take place in inanimate bodies. Certain properties of the living fibres, and the various modes of sensibility, are specific; but these phenomena are not *contrary* to the laws of physics, chemistry, etc. If these phenomena were demonstrated to be contrary to these laws, it must follow that the latter are either *false* or *incomplete*; and that they ought *to be changed* or *completed*.

We regret that our limits do not permit us further to insist on the truth as well as the high importance of the idea which has guided the author of the book of which it is now time we should render account.

In the general considerations which precede the main body of the work, the author establishes his fundamental proposition. Summing up the definition of a living being given by Cuvier, M. Mailhe shows the organism to be a kind of chemical focus, in which there is a constant arrival of new, and departure of old molecules; he shows that harmony which reigns between all of the constituent parts; he shows how by the act of digestion external materials are introduced into the organism everywhere transported by the circulation, oxydated by *respiration*, eliminated either directly or after having served the purposes of nutrition, by *urination*, defecation, perspiration, etc., and he points out the chemical phenomena of fermentation, catalysis, etc.

These remarks, thus briefly made, show that M. Mailhe is deeply impressed with the conviction that there can be no true therapeutic science without physiology, and that without physiology, we are no better than charlatans and bone-setters—and cannot be physicians.

The author in his first chapter, treats of the part which oxygen acts in the animal economy. He considers it as a body combusto-facient, acting at the temperature of the body, by a mechanism analogous to that according to which it combines with hydrogen in the presence of spongy platinum. But oxygen does not act in the same manner in all bodies which are put in relation with it. Some of them, indeed, as the albuminoids, the volatile oils, the citrates, the tartrates, etc., are directly oxidable after having undergone a preliminary alteration under the influence of the alkalines. Some substances there are as gum, and mannite which absolutely resist oxidation. It is especially in this chapter that the author shows that the chemical phenomena which take place in the animal economy are identical with those which take place out of the body.—He discusses the nature of the products resulting from this oxidation, some of which are found in the urine, giving to the latter properties corresponding with the aliments ingested, and the different degrees of oxidation which they have undergone during the passage through the organism. Oxidation being a condition essential to the maintenance of life, every agent which prevents the occurrence of this phenomenon, must necessarily be a poison. Hydrocyanic acid, which according to M. Millon, completely arrests combustion, oxalic and iodic acids, which also arrest the combustion of the aliments by oxygen, destroy life immediately. But substances which are easily oxydated, do not act solely on the economy by their capability of absorbing oxygen, but act also by the products resulting from their combination with this gas. Thus sulphuretted hydrogen is not only a poison from the fact of its excluding oxygen, but it kills also by the sulphuric acid which results from its combustion.

M. Mailhe treats in the same chapter of *digestion*. He shows that the ancients had proclaimed the phenomena of fermentation, which so largely rules this important function, and that it was reserved to modern chemists to demonstrate its existence. He treats, in succession, the action of *pepsin* and *diastase*, he being the first to recognize the existence of the former in the saliva. He compares the action of the *normal ferments* with those producing virus, which latter he holds to be *pathological ferments*. The ingenious experiments of the author on the digestion of the albuminoids, amyloids, and fatty matter, are too well known to require us here to offer an analysis. Suffice it to say, that they answer almost invariably the serious objections which have been raised against the author's theory. He takes occasion when speaking of the digestion of the amyloids, to speak of the cause and treatment of sugared dia-

betes. It is well known that this disease is the consequence of a too feeble alkalinity of the blood, which by reason of this is unsuitable to the transformation of the glycoze into this *new* substance, which *alone* can combine with oxygen. The cause of the malady once known, the treatment naturally suggests itself, which consists in the employment of all the means which can restore to the blood the deficiency of alkali.—As a man who does not pretend to have the key of science in his pocket, M. Mailhe highly estimates the discoveries of M. Claude Bernard, and the theory to which experimentation has conducted M. Reynoso. As for ourselves we believe that the treatment of this disease, formerly so intractable, ought to be based on an association of considerations drawn, at once, from three theories—each too exclusive in our opinion, the authors of which we have named. It must not be forgotten that diabetes is capable of producing profound changes in the economy, not only because the amyloid matter which normally ministers to the respiratory function, is eliminated without having *undergone* the action of oxygen, but also because the presence of *sugar* in the blood, modifies its absorbent properties, as has been demonstrated by the recent experiments of M. Bernard. It is in this last point of view that the privation of the amyloids, as briefly stated by M. Boucharlat, becomes a matter of the greatest importance.

M. Mailhe has not deemed it proper to pass over the subject of the digestion of amyloid matter, without giving his opinion on the origin of of sugar in the animal economy, a subject now exciting so much controversy. He has not without qualification been enabled to realize what M. Claude Bernard claims to have demonstrated by irrefragable experiments. And here let us be permitted to say, that these experiments which have been conducted with the most consummate ability, do no longer appear to us free from all objections. There is one indeed which to some rigid minds appears conclusive, and to which we ourselves have not attached a very great importance, namely, the one touching the experiment by which M. Claude Bernard demonstrated that at a given moment there is more sugar in a given quantity of blood proceeding from the supra-hepatic veins, than in the same quantity of blood drawn from the vena porta. This fact would have the weight which certain persons attach to it, if *all* the blood of the vena porta passed by the hepatic veins, after having traversed the liver; but such is not the fact. A part of the blood is destined to the secretion of bile, which does not contain sugar. Let then  $A$  be the quantity of sugar contained in  $M$ , the mass of



the blood of the vena porta ; suppose, then, that the half of the blood is appropriable to the secretion of bile, and that the other half passes into the supra-hepatic veins ; it is obvious that if the bile contains no sugar, this last half will contain all which is contained in the *M*, the mass of the blood of the vena-porta ; or if half *M* of the blood contained in the supra-hepatic vein, contains *A* of sugar, *M* will contain two *A* ; that is to say, in equal masses of the blood of the supra-hepatic vein, there will be contained a quantity of sugar which is double that contained in the vena porta, without it resulting that the liver should have produced the least quantity of this immediate principle. We might by analogous reasonings support the position, that at a given moment the vena porta might not contain the least proportion of sugar, and that the supra-hepatic might contain a notable proportion, without it necessarily following that the liver must be made to intervene as the secretory organ of this product. We would not, however, be misunderstood. We do not deny the gleyogenic function of the liver ; but we would merely declare that we do not believe this function to be so clearly demonstrated as is generally supposed ; and the eminent society that submitted this question to the *concoirs*, is probably of our opinion.

The digestion of the albuminoids is treated *in extenso*. The author has treated not only of the action of the gastric juice, but also that of two principles which are its essential constituents, and in a well written history of the subject, he shows that albuminose constituting the uniform transformation of the azotized aliments under the influence of the digestive action, was previously understood, that the part which it acts had been appreciated in advance of the complete history which he himself has given of it differing much in this respect from numerous individuals who very carefully avoid making known the labors of those who have preceded them ; who go so far as to even abstain from knowing them, thus maintaining as clear a conscience as the man who having found a purse of money, carefully avoiding reading the evidence it contained, for fear of discovering the proprietor.

The opinion of MM. Bernard and Barreswil, which favors the idea that pepsin and diastase are one and the same substance, producing different effects according to the medium in which they act, appears to us to be refuted in the most satisfactory manner.

The article which treats of the *state of albumen in the economy*, is of the highest interest. We find here experiments not less ingenious than the theoretical and practical ideas which he draws from them. These

experiments demonstrate that albumen exists in the animal economy in three states, characterized by distinct properties : 1, *normal* or *globular albumen* insoluble in water, and entirely coagulable in by nitric acid ; 2, *caseiform albumen*, partly soluble, precipitating in part by nitric acid and re-dissolving in excess of acid ; 3, *albuminose*, entirely soluble, and not precipitating by nitric acid, but precipitating by tannin. M. Mailhe turns to account the knowledge possessed of the properties of albumen under these different states, in studying the conditions which permit the substance to enter the vessels, there remain, and from thence escape, and he brings to light the influence exercised on the transformations that he has pointed out, as excess of water in the blood, the presence of virus, etc. According to him albuminuria has most generally for its cause hydroæmia. He combats by means of deductions borrowed from M. Liebig, as well as by his own experiments, the views of a distinguished chemist, M. Edouard Robin, who thinks that albuminuria is the result of the want of the combustion of albumen. The author is far from neglecting, as he has been charged with doing, the action of the membranes on the secretions. On the contrary, he brings forward in a most appropriate manner the experiments of M. Matteucci, who has demonstrated the influence that the alteration of the texture in the organized lamellæ, exercise on the endosmotic phenomena.

After having studied pepsin and discovered animal diastase, M. Mailhe was well disposed to believe that an analogous fermentation to the two preceding, must intervene in the digestion of fatty aliments. Numerous experiments, however, led him to abandon this opinion, and to explain the emulsionization of these substances, by the alkali contained in juice of the intestinal canal. More lately M. Bernard, who himself maintained the identity of the two first ferments, concluded that he found in the pancreatic juice a special agent for the transformation of fatty substances. All are familiar with the beautiful experiments on which this illustrious Professor bases his opinion. M. Mailhe has remained immovable in his conviction, and we may remark that the labors of MM. Bidder and Schmidt, as well as those of a man, M. Colin, who has recently published a very valuable book on physiology, has confirmed M. Mailhe in his position.

The chapter which treats of absorption has been the result of careful study, and is of itself sufficient to place M. Mailhe in the first rank in school which has rationalized therapeutics.

Any substance, of what nature soever it may be, in order to be absorbed must present the three following conditions : 1, it must be fluid ; 2, it must moisten the membrane with which it comes in contact ; 3, it must not form with it an insoluble combination. These three propositions are demonstrated by a series of facts and arguments, which appears to preclude all controversy. Setting out at this demonstration, Medicinal and toxical agents are divided in two classes ; 1, those which coagulate albumen (coagulants); 2, those which dissolve albumen fluidifiants. The author exemplifies this division and demonstrates its importance by a great number of ingenious experiments, all of which are original. He explains how substances which at first coagulate the albumen of the tissues with which they come in contact, and thus form with them a solid combination which is inabsorbable, become afterwards fluidifiant, in consequence of combination with elements which are furnished by the blood itself. Such is corrosive sublimate which being in its nature a coagulant, becomes fluidifiant by its combination with the chloride of sodium, etc., etc.

He also shows how the composition of medicines introduced into the current of the circulation, changes by reason of the reciprocal action exercised between them and the chemical materials which constitute the nutrient fluid, and he draws from these various considerations, consequences which are immediately applicable to therapeutics, and to the treatment of poisoning, etc.

After having advanced, on the absorption of medicines, ideas so generally allied amongst themselves, that it is only in the book itself they can be laid hold of, he proceeds to the subject of absorption of medicinal and toxical agents, either insoluble or little soluble. It is here that we find at once the pharmaceutic and toxicological history of carbon, iodine sulphur, phosphorus, arsenic, alumina, magnesia, lime, barytes, iron, zinc, tin, lead, bismuth, antimony, mercury, gold, platinum, the resins oils, alkalis, and plants. In treating of *arsenic* the author proposes as an antidote to this dangerous metal, or rather to its compounds the proto-sulphuret of iron, which forms with the poison a compound having a nearly absolute innocuity. He insists with great justice on the coagulant property of alum taken in small doses, the same agent becoming fluidifiant in larger doses, exhibiting a striking example of medicines exhibiting different and even opposite qualities, according to the dose employed.



He devotes to the subject of iron not less than sixty pages. In a great number of observations and experiments confirmative of his general idea, the author comes to the conclusion that all of the ferruginous preparations capable of being decomposed by the alkalis of the blood cannot be of any utility to the animal economy, that those which are soluble ought always to be preferred to those which are insoluble, and that which has the least taste and is the most rich in iron, and the most completely absorbable, is the *ferrio-potassic tartrate* of iron.

It is when speaking of the salts of lead, mercury, silver, etc., that M. Mailhe shows the part which is acted by the normally insoluble alkaline chlorurets of the blood. According to him, the preparations of lead are the more absorbable from the fact that they are more apt to transform themselves in the economy, into an alkaline chloro-plumbate, a compound in which resides the medicinal and toxical properties of all the chemical compounds which have lead for their base.

All of the mercurial preparations employed in medicine transform themselves into corrosive sublimate in the organism, and this transformation takes place under the influence of alkaline chlorurets contained in the blood, or in the secretions. The quantity of the corrosive sublimate which thus originates will correspond ; 1, with the degree of chloruration of the fluids of the body ; 2, with the nature of the compound taken into the stomach. This latter fact will explain the want of uniformity of action amongst the various mercurial preparations, and explains also how a feeble dose of calomel given to an individual whose fluids are strongly chlorurated in consequence of a salted alimentation, is capable of producing effects much more intense than a very considerable dose of the same agent given to a patient who has been for a long time strictly dieted, and of whom the blood has lost, in the excretions of each day, a great portion of the chloruret, that it contains in the normal state. We have seen a case of poisoning, of a very grave character by five decigrammes (1 grain) of calomel.

What we have said of lead and mercury is applicable also to silver, gold, platinum ; the hydrated proto-sulphuret of iron which forms with all the compounds of these metals an insoluble sulphuret, is the antidote to each of them.

The absorption resins and oils is not possible except in the presence of alkaline bases, existing in the intestinal liquids.

If we except morphine the vegetable alkalis are very soluble in the acids, and but little so in the alkalis. They must then be given by the

mouth, since by this means they arrive immediately, in the stomach in the acids which are their solvents. If they are administered by the anus they must be previously acidified.

The chapter of the author entitled, *corollaries on the absorption of medicines and poisons* treats of the elimination of foreign substances from the organism. In this article M. Mailhe lays down rules by means of which we may determine in advance the course which this substance or that takes, in finding exit from the system. According to him excretion exhibits nothing organic or vital. It is a phenomenon entirely ruled by the laws of physics, and chemistry. The author in this chapter gives a chemical classification of poisons on which is based the treatment of all poisoning, the hydrated proto-sulphuret of iron being almost a general antidote. The author speaks of stagnation of poisons in the different organs of the body, and always explains the same on physico-chemical principles. It is on the same principles that he explains those pretended *idiosyncracies*, which have so much puzzled therapeutists, insisting on the influence of the mode of administering and on the modifications which medicines undergo or must undergo in the organism, and the consequent effects which are produced. According to our author, Medicinal and toxical agents act in four different modes. 1, by arresting the circulation of blood; 2, by increasing the activity of the same; 3, by preventing the chemical reaction to which the blood is liable; 4, by producing in the blood abnormal chemical reactions.

The author's sixth and seventh chapters are entitled, *Pharmaceutical and therapeutic researches on the principal forms of Medicines and special Medications*, and are of the highest importance to pharmacutists as well as physicians. The day is come says M. Mailhe, when the science of pharmaceutics, as it is called by Ampère ought to borrow from physiology the scientific knowledge which alone can enlighten its path, and give to its precepts the authority of demonstration. We have too long sought to enforce this idea, to withhold our unqualified assent, and we do not hesitate to say that when it shall have been generally appreciated we shall see all those indigestible drugs of the ancient pharmacy disappear from respectable establishments, and take refuge in the shops of charlatans.

ART. IV.—*Remarks on the Treatment of the Cases of Diabetes admitted into the Glasgow Royal Infirmary, from November, 1854, till April, 1856.* By JOSEPH BELL, M. D., Physician to the Royal Infirmary.

IN glancing over the history of diabetes, we find that only four important discoveries have been made regarding its pathology, each giving rise to several theories, and leading to considerable modifications of treatment. These discoveries may therefore be viewed as constituting four important eras in the history of the disease:—

I. About the year 1674, Willis first pointed out the sweet smell and taste of diabetic urine. Four years later, Cowley extracted sugar from the fluid. Previous to this period, medical men were not aware of the existence of sugar in the urine. They regarded the disease as a species of consumption, in which the patients ate and drank inordinately, passed large quantities of urine, and became rapidly emaciated. They were looked upon as mere siphons, as the name *διασφηγῆς* imports, or as Willis has it—"Diabetes a *διασφανω* transeo dicitur materię potulentę nimis celer transitus, item urinę profluvium."

The discovery of Willis, no doubt, produced as great a sensation in the medical world in his day, as that of Bernard in our own age. Numerous theories were announced to explain the phenomenon. Willis viewed the disease as an affection of the blood, not primarily of the kidneys. The illustrious Sydenham adopted this opinion. Mead, on the other hand, ascribed the disease to a morbid action of the stomach.—Rollo entertained a similar view. He states that "it consists in an increased action and secretion, with a vitiation of the gastric fluid, the skin and kidneys becoming secondarily affected." Another class of writers held opinions the very converse of these. Bonet, Ruysch, Cruickshank, Richter, Guendeville, Watt, Henry, and others, conceived the kidneys to be first at fault, and the stomach secondarily. Cullen appears to have considered the disease as an abnormal action of the digestive organs; but we find, in accordance with his theory of the "spasm of the extreme vessels," he has placed it in the order Spasmi, class Neurosis.

II. These theories gave rise to the various methods of treatment in use prior to the year 1815, when M. Chevreul made his important discovery, which may be considered as introducing the second era in the history of the disease. Willis made known the existence of sugar; Chevreul discovered the *kind* of sugar. He proved that the sugar of diabetic urine was similar to that which is obtained from the juice of grapes, or from the action of diastase on starch. This discovery, in its turn gave rise to new theories regarding the nature and treatment of the disease. In the year 1825, Tiedemann and Gmelin propounded the doctrine, that the sugar resulted from the abnormal assimilation of starch and farinaceous substances. Several ingenious opinions were offered in explanation of the manner in which this conversion of starch



into sugar took place. The most plausible of these was that of M. Bouchardat, announced in a memoir read before the Academy of Sciences in 1838. He asserted that there was generated in diabetes a substance which acted on starchy matters in the same way as diastase, and that this converting substance was frequently, if not always, produced by suppressed cutaneous secretion. He proposed to cure the disease by withholding from the patients the use of all kinds of farinaceous and vegetable aliments, and by the frequent use of the hot bath and other diaphoretics. The views of Bouchardat were only enunciated to be discarded, in consequence of the discoveries of one whose early death we have much reason to lament, and whose contributions to medical science have shed a lustre over the Glasgow school—I allude to the late Dr. Robert M'Gregor. He published, in May, 1837, the results of his experiments, which completely set aside the views of Bouchardat. It is but fair, however, to state, that this writer was not aware of the experiments of M'Gregor when he published his memoir.

III. The discoveries of Dr. M'Gregor, therefore, constitute the third era in the history of diabetes. He demonstrated that sugar was formed in the stomach of a diabetic patient when animal food was exclusively used; that sugar existed in the blood and other secretions as well as in the urine; and, thirdly, that sugar was formed in the stomach during the digestion of vegetable matters by *non-diabetic patients*.

Magendie and others, following in the path which M'Gregor pointed out, established the fact that sugar passed normally into the system, as the result of the digestion of farinaceous matters. Hence it became necessary to find out some new theory to explain the production of sugar in the diabetic. The most plausible was that of Maille, published in 1844. He retrograded back to the blood origin of Willis, with this essential difference:—Willis held “that the mass of blood becomes, so to speak, melted down, and is too copiously dissolved into a state of serosity, which is sufficiently manifest from the prodigious increase of the quantity of urine, which cannot arise from any other cause than the solution and waste of blood.” This wrote our countryman in 1674.—One hundred and seventy years afterwards, we find Maille asserting that the sugar formed during the digestion of the farinaceous substances becomes absorbed into the blood, which, being of an alkaline character, enables the sugar to be transformed by deoxydizing some other constituent of the vital fluid—a well-known property of sugar when it exists in alkaline solutions. He affirmed that in diabetes this transformation or oxydation of the sugar did not take place in consequence of the blood being in an acid or non-alkaline condition. The sugar was alleged in this manner to accumulate in the blood, and become excreted by the kidney; or, in other words, he held that the transformation of the sugar in healthy alkaline blood was the normal condition—was health—and that the non-conversion of sugar in acid or diseased blood was disease—was diabetes. He accounted for the acid condition of the blood, partly from suppressed cutaneous secretion, and partly from the too fre-

quent use of acids, especially acidulated drinks and vegetable diet.—Hence the origin of alkaline treatment—hence the restriction from vegetable diet.

IV. These opinions governed the medical world until the experiments of Bernard proved the theory of Mailhe to be as fanciful and unreal as that of Willis. The discoveries of Bernard regarding the sugar-producing function of the liver, commences the *fourth* era in the history of diabetes.

The relative share which our allies the French can claim with us in the elucidation of the pathology of the disease, is worthy of a passing remark. Willis established the *existence of sugar*. Chevreul discovered the *character of that sugar*. M'Gregor proved the existence of sugar in the stomach and blood, irrespective of the character of the food whether animal or vegetable. Bernard discovered the *organ* by which this sugar is formed. Thus it is that the medical philosophers of the two countries have been always allied in the cause of truth and science, as their politicians and warriors have been recently united in the cause of liberty and civilization.

The gift of genius is not restricted either to age, country, or caste. It is as extensive as the human race. We see, on the one hand, Willis, the physician of Charles II., amidst all the luxury, revelry, and temptations of such a court, eschewing all these seductive pleasures, and devoting himself to the study and improvement of his profession. On the other hand, we perceive a youth, born in the far north, amidst the roaring surges of the mighty Atlantic, spending his boyhood among nature's "wolds, the heathy mountain, and the brecken dell," imbibing the elements of knowledge at one of those parochial schools which, as centres of knowledge, have for centuries sent forth their rays into the remotest parts of this country. In the prosecution of knowledge, the young man comes to this city; he obtains the appointment of apothecary to the Infirmary; and when he had scarcely numbered his twentieth year, he instituted the experiments that resulted in those discoveries, which overturned theories and opinions that had long prevailed, opening up new fields for investigation, in which such veterans as Magendie became followers of, and joint laborers with, the youthful Highland pioneer.—Even the brilliant discoveries of Bernard are to be traced to those of M'Gregor. It was the light which the latter evolved that led the way for that distinguished Frenchman, by whom, I regret to say, no acknowledgments have been made of the source of which he obtained the clue to his own discoveries. But history will supply the omission, and more than one pen has already done justice to M'Gregor. His name so long as the science of medicine exists, must remain associated with the pathology of diabetes. Discoveries like his can never cease to exist; they shall never pass into nothingness; but will always continue to guide and instruct future generations.

There is another reflection which I cannot help noting, viz., the paucity of the *facts* that have been elicited regarding the disease during

nearly two centuries, and the multiplicity of the theories that have been promulgated—a circumstance which we find to exist in the history of many other important diseases, as well as in the one under consideration. Apologizing for this digression, I now beg to give a brief statement of the important points which have been established by Bernard.

1. The liver secretes sugar from the blood, and this takes place independent of the character of the food, whether it consists of animal or vegetable substances.

2. The formation of sugar is not produced by a mere catalytic action, but by the separation of a portion of the blood, through the vital agency of the cells of the liver; and this separated portion undergoes further changes, which end in the formation of sugar. Therefore, the substance which immediately precedes the production of sugar does not exist in the blood, but is secreted from it by the liver.

3. The liver forms bile from the blood.

4. The liver converts the results of the digestion of saccharine and farinaceous substances, not into sugar, but into an opaque fluid of a fatty character.

5. A large portion of the sugar becomes transformed, or converted into other compounds in the lungs, not, however, by the action of oxygen alone, as Dr. Pavy alleges. Bernard found that, on exposing saccharine solutions to the action of oxygen, the sugar remained unchanged as long as when it was exposed to the action of atmospheric air or carbonic acid. But when such solutions were brought under the influence either of nitrogen or hydrogen, the sugar rapidly disappeared.

6. Derangement of the pulmonary functions affects the quantity of sugar. Whatever increases the activity of respiration, augments the amount of sugar, and *vice versa*.

7. Irritation of the brain at the bottom of the fourth ventricle produces an artificial diabetes.

8. Such production is only of a temporary character, unless congestion of the liver and digestive organs be induced.

9. A section of the spinal cord beneath the cervical enlargement interrupts the secretion of sugar by the liver.

10. A section of the spinal cord above this enlargement deranges, but does not suspend, the saccharine function of the liver.

Though these important facts completely overthrow the erroneous notions which previously prevailed, and are calculated to throw much valuable light on the pathology of diabetes, yet we have to lament the immense darkness and ignorance which still exist, and which are likely to remain unmoved during a long series of years.

How is it possible to tell whether the organ primarily affected be the liver, lungs, or brain? Even if we were able to trace the origin of the disease to the liver, how are we to determine whether sugar results from super-secretion, or from a non-conversion of the results of the digestion of saccharine and farinaceous aliments into the opaque fatty fluid? If we could resolve these difficulties, we would still have to investigate the



nature of the lesion, by which the extra-secretion or non-conversion was produced. Difficulties equally formidable attend our researches regarding the important share which the lungs and brain have in the production of the disease.

Until these obscurities be removed, we dare not presume to say that we can treat diabetes on scientific principle. We must remain under the banner of experience and observation. Though it is exceedingly pleasing and flattering to human vanity to aim at the treatment of this or any similar disease on the principles of the absolute school of philosophy, yet I am afraid that we will find in the end, that such teaching will prove an abyss which will swallow up what is positive and useful in medicine as an art, and leave behind the hollow idea and dead formula. Be this as it may, surely no rational man, though he cannot explain the nature of the affection, will hesitate to use the remedies which experience and observation point out as capable of modifying diseased actions when incapable of being removed, and thus prolonging the life of the patient. He must be an egregious fool, that would refuse to employ his hands to guide him through a dark cavern, because he could not see. In the same way, the physician is ignorant of his vocation, if he object to use the remedies which experience has found beneficial, until all the darkness which obscures the nature of the disease be removed. I intend these remarks to prepare the reader, not to expect in the observations, which I am about to make, anything new, anything that will enable him to cure diabetes. All the information which I can contribute from my experience is, that I deem certain remedies capable of restraining the disease, alleviating the sufferings of the patients, and prolonging their existence.

*Case I.*—November 10, 1854. —W. K., aged 16 years, a worker in a cotton factory—of a strumous constitution, considerable emaciation, and complains of great debility—has a troublesome cough, attended with a slight mucous expectoration. The physical examination of the chest detected dulness on percussion at apices of both lungs. On the left side prolonged expiratory murmur increased vocal resonance, and slight mucous rales. He voided daily 36 lbs. of urine, specific gravity 1.034. The copper test and yeast gave the usual indications of the presence of sugar.\* He had been a patient in the Infirmary during the summer months, and had been dismissed much improved. So near as we could ascertain, the disease was of eighteen months' duration.

*Treatment.*—He was placed on a diet of animal food and gluten bread; no vegetables and no farinaceous articles of diet, but plenty of milk. He was ordered one grain of opium three times a day, and a blister to nape of neck. On the 14th, the urine was reduced to 16 lbs., specific gravity 1.036. The opium was increased to one grain every six hours. On the 16th, the urine was reduced to 12 lbs. Another blister was ap-

\* To save repetition, I may mention that the tests employed in the other cases, were Moore's Trommer's, Barreswill's—nitrate of silver, sulphuric acid, and yeast, the latter being the one on which chief reliance was placed. I intend to mention, in the sequel, my reasons for this preference. I beg also to observe that I have no intention to give a long and tiresome detail of the cases. I do not see any good purpose that this could effect. I will merely narrate the salient points, and give a short summary of the progress which was made under the treatment.

plied to nape of neck. On the 23d—that is, thirteen days after admission—the urine amounted to 11 lbs. The opium was increased to a grain and a half every six hours, and the blister repeated. On the 2nd. December, the urine was reduced to 7½ lbs. ; that is, twenty-two days after admission. He was now ordered, in addition to the opium, five grains of the sesquicarbonate of ammonia, ten grains of prepared chalk, and ten grains of bicarbonate of soda, three times a day. This change of treatment was followed by an increase in the quantity of the urine, and on the 9th it was found to be 10 lbs. The alkalies were then discontinued, and he was ordered twenty drops of the muriated tincture of iron three times a day. From this date, the urine amounted to 7 lbs. daily, of specific gravity, varying from 1·034 to 1·040, till the 16th of January, when he was dismissed ; his general health being considerably improved. He was thus two months under treatment, the urine being reduced from 36 lbs. to 7 lbs., the specific gravity unchanged, and sugar readily detected on the application of the tests.

He returned to the infirmary on the 27th March, the condition of his lungs having become much worse ; the existence of a small cavity in apex of left lung was now too evident. He stated that, after he left the house, his urine had gradually increased. On examination we found that it amounted to 27 lbs. daily, specific gravity 1·038. Presence of sugar evident.

He was ordered the ordinary full diet of the house, a table-spoonfull of cod-liver oil thrice daily, and ten grains of Dover's powder at bedtime. On the 4th April—that is, six days after treatment—the urine was reduced to 13 lbs. He was now ordered a dose of Dover's powder each morning. On 10th April—that is, the twelfth day of treatment—he passed only 6 lbs., specific gravity 1·032 ; traces of sugar being still evident when the tests were employed. Matters continued almost in the same state until the 17th April, when he was dismissed ; the chest symptoms being much mitigated, and his strength and appearance having become much improved. He was ordered to persist in the use of the cod-liver oil.

REMARKS.—This case presents an example of a very frequent complication of diabetes, viz., phthisis. The only point to which at present I wish to advert, is the different results which followed the two plans of treatment. On his first admission under my care, he was placed under a restricted diet, and opium, with blisters to nape of neck. He was under this treatment 57 days ; the urine being reduced from 36 to 7 lbs. On his second admission, he had the ordinary full diet, had only small doses of opium, along with cod-liver oil. He was under this treatment 20 days ; the urine being reduced from 27 lbs. to 6 lbs., and his general health vastly improved.

*Case VI.*—J. M'C., aged 35 years, admitted June 6th, 1855.—Complains of great debility, emaciation, thirst, and large flow of urine ; no disease of lungs or other viscera, except tumidity of abdomen. The quantity of urine voided daily was ascertained to be 38 lbs., specific

gravity 1.038. Abundant evidence of sugar. He was ordered gluten bread and animal food ; a grain and a half of opium three times a day ; a blister to right hypochondrium. On the 18th, the urine was reduced to 18 lbs., specific gravity 1.036. On the 26th (twenty days after admission,) it amounted to 12 lbs., specific gravity 1.038. He had, by this time, become much exhausted ; ankles œdematous, pulse weak.—He was ordered the ordinary diet, the opium to be discontinued, and to have ten grains of the muriate of ammonia three times a day. The urine increased after this change of treatment, and on July 12th amounted to 30 lbs., specific gravity 1.032. His general condition, however, improved most satisfactorily. The ammonia was discontinued, and he had two grains of opium three times a day. On the 20th, the urine was reduced to 15 lbs. The opium was at this date increased to two and a half grain doses three times a day, and the ammonia was resumed. On the 31st, the urine was reduced to 9 lbs. He was now ordered a table-spoonful of cod-liver oil three times a day. On the 5th August, the urine was 8 lbs., specific gravity 1.035. He then left the Infirmary, his general health being excellent.

REMARKS.—In this case, the ammonia, when used alone, was not followed by improvement. The beneficial effects of the opium are very well illustrated in this, as in the other cases—its suspension being followed by a great increase of the urine, this becoming rapidly diminished when the patient was put solely under its influence.

The second time that the ammonia was given along with the opium, a rapid diminution of the urine took place. This fortunate change continued to progress, when the addition of cod-liver oil was ordered. I was anxious that he should remain longer under observation ; but as he found himself fully competent to resume his occupation (a miner,) he would not remain. I would beg to direct attention to the symptoms of exhaustion which made their appearance in this case on the 26th June. The same circumstance occurred with Mrs. T. I am fully persuaded that, had a change in the diet of these patients not been made, and the treatment interrupted, the debility would have continued to increase to a fatal extent. I deem such symptoms to arise, at least in part, from the restricted diet and the disordered condition of digestion by the exhibition of opium. In this way, we in reality establish a process of slow starvation. Take any man in perfect health, and restrict him for weeks and months to animal food, gluten bread, and constantly supply him with large doses of opium, you will soon bring him to a sufficiently feeble condition. This is precisely the treatment under which we place diabetic patients ; and are we not in the habit of expressing our surprise, that all the patients so treated have invariably died ? After all, it is really wonderful that they lived so long.

Case VII.—Mrs. G., aged 23 years, admitted 17th December, 1855.—About three weeks ago she began to find that she was passing large quantities of urine. Her thirst became urgent, and her appetite inordinate. She rapidly became feeble and emaciated. Abdomen tumid.



No disease of the lungs. She was weighed, and found to be 85 lbs.—The day after admission, she voided 29 lbs. of urine, of specific gravity 1·040, and loaded with sugar.

She was ordered a full diet, and had half a table-spoonful of cod-liver oil three times a day, and two grains of opium at bed-time. On the 24th (six days after admission,) the urine was reduced to 24 lbs. A blister was applied to hepatic region, and an additional grain of opium to be taken each morning. The oil to be increased to a table-spoonful three times a day. On the 26th (eight days after admission,) the urine amounted to 12 lbs. It remained almost stationary till the end of December. The patient had greatly improved in strength, and weighed 95 lbs. She was then ordered, in addition to the other treatment, a tea-spoonful of the aromatic spirits of ammonia three times a day.—Though the strength of the ammonia was gradually increased till the 15th January, 1856, no change occurred. The ammonia was suspended and she was ordered twenty drops of the muriated tincture of iron three times a day. The opium to be increased to three grains at bed-time, the morning dose to be discontinued. On the 22d (five weeks after admission,) the urine was reduced to 10½ lbs. On the 10th February the quantity was 10 lbs., specific gravity 1·035. She now weighed 100 lbs., thus having gained one stone. From this till the 26th no change took place. She left the Infirmary, her urine being reduced from 29 to 10 lbs., the specific gravity reduced from 1·040 to 1·035, her general health greatly improved, and her thirst, inordinate appetite, and debility being removed.

*Case VIII.—S. M'G., aged 24 years, admitted 26th January, 1856.*—Three months previous to admission, he had his attention drawn to an increasing amount of his urine. At the same time he commenced to be troubled with thirst, became feeble, and lost flesh rapidly. No pulmonary disease.

The day after admission he was found to weigh 127 lbs. He passed 24 lbs. of urine, specific gravity 1·050, the presence of sugar made evident by the application of the tests.

In the last two cases, besides the usual tests for sugar being employed I also availed myself of a *new one*, brought under my notice by my young friend, Dr. Andrew Buchanan, Jun., of this city. It is most scientific, so far as I know original, and free from any fallacy. Strong nitric acid is added to the urine, if sugar be present, exposure to heat causes fumes of hyponitric acid to be evolved. I beg, however, to give the rationale in the words of the author, upon whom the test reflects great credit; and affords promise that he will fully maintain the well-merited reputation which his esteemed father enjoys for high scientific and professional acquirement:—

*“Action of Nitric Acid on Sugar.”*—Dilute nitric acid converts cane sugar in great measure into saccharic acid—a product containing five more atoms of oxygen. As the acid is strengthened, less of this comes to be formed. And on adding strong nitric acid to cane sugar, the

principal products of the decomposition are oxalic acid  $C_2O_3$ , and carbonic acid  $CO_2$ . At the same time, fumes of hyponitric acid,  $NO_2$ , make their escape. An excess of nitric acid is thus demanded, since a large quantity of oxygen is necessary for the carbon in every atom of sugar, while the nitric acid is only deoxidated to the extent of a single equivalent. With grape sugar,  $C_{12}H_{22}O_{11}$ , the same changes take place much less rapidly, a preliminary boiling of from two to five minutes being generally required before the action is fairly established. Afterwards, by evaporating, neutralizing with ammonia, and testing with sulphate of lime, the presence of oxalic acid may be demonstrated."

He was ordered three grains of opium at bed-time, and the ordinary full diet of the house. On 13th February (a fortnight after admission,) the urine was reduced to 16 lbs., specific gravity 1.050. He was now ordered bicarbonate of soda, carbonate of magnesia, carbonate of ammonia, according to the formula of Mialhe. Three days afterwards, the urine was found to amount to only 10 lbs. A few days afterwards, however, the quantity increased to 16 lbs. The alkaline mixture was suspended. He was ordered a table-spoonful of cod-liver oil three times a day, a blister to nape of neck, and two drops of hydrocyanic acid (Scheele's) three times a day. In a few days the urine fell to 9 lbs., specific gravity 1.030. His general health was so much improved by the 4th March, that he would not remain longer in the Infirmary. He was five weeks under treatment; the urine was reduced from 24 lbs., specific gravity 1.050, to 9 lbs., specific gravity 1.030. His weight on admission was 127 lbs.; when he left it was increased to 142 lbs.

REMARKS.—The observations which I have to make on the foregoing cases, will be confined to a few general remarks on the different remedies employed.

I. *Opium*.—This I deem a remedy of the highest value. The records of medicine show us that we possess no drug that has such powerful control over the disease. The cases which I have quoted amply confirm this beneficial agency. Of late years, the remedy has been denounced as unscientific and empirical, only acting by diminishing the urinary secretion.

It is quite possible that the first few doses may diminish the action of the kidneys, but this effect soon ceases. Patients who are obliged to use opium constantly for other affections, find their urinary secretion as abundant as it was previous to the employment of the drug. We must look elsewhere for an explanation of its power over diabetes. The solution, I think, we are likely to find in the discoveries of Bernard. 1st. We know that opium possesses an immense power over the function of the liver, reducing its activity. 2d. The influence of opium over the cerebro-spinal system cannot be denied. 3d. In full doses it reduces the respiratory actions. Bernard has shown that excitation of the functions of the liver, of the lungs, or of the brain, is associated with the appearance of sugar in the urine. Opium, therefore, by its power of reducing the functional activity of these organs, claims consideration as a

scientific remedy. I have only to add, that I have found it better to give one full dose at bed-time, than smaller ones at short intervals. By this plan, we cause less derangement of the digestive functions. We may also act beneficially in another way. Bernard has shown, that by severely irritating the brain substance at the bottom of the fourth ventricle, so as to induce congestion, no sugar is produced in the urine—a slight degree of irritation causing its appearance. Now, small doses of opium, by producing a stimulating effect, might even increase, or, at least, would not diminish the secretion of sugar; whilst, on the other hand, a full dose, by its congestive effects on the brain, would powerfully influence the production of sugar. I have never ordered the immense quantities prescribed by many practitioners. Dr. M'Gregor states that some of the patients who were the subjects of his experiments, took as much as sixty grains during twenty-four hours. Such heavy doses must interfere very seriously with digestion and nutrition, and consequently tend powerfully to debilitate the patient, especially when conjoined with restricted diet. Indeed, as I have already observed, this plan becomes a process of slow starvation, essentially assisting to hasten a fatal termination. The cases which I have detailed, show, at least, that by moderate doses twice or thrice daily, or even an ordinary dose at bed-time, we can reduce the urine to a moderate quantity, and restore the strength of the patient.

II. *Ammonia and Alkaline Remedies* were in considerable reputation previous to the days of Willis, by whom they are favorably recommended. Then, and long subsequently, they were used empirically; that is, solely in consequence of the advantage which generally resulted from their employment. Of late years they have been used on other considerations; namely, the supposed acid condition of the blood, and consequent non-conversion and accumulation of sugar in the system: the idea entertained being, that ammonia and alkaline salts, by destroying the acid state of the blood, permitted the oxidation or transformation of the sugar to take place. Whilst we know that this explanation of the *modus operandi* is erroneous, yet we must admit that benefit resulted from the use of the remedies. The cases which I have narrated verify this opinion. I think we can explain this efficacy on sufficiently plausible grounds. 1st, The action of ammonia on the liver, especially the muriate, is acknowledged by numerous writers of all countries and ages. 2d, Bernard has demonstrated, that the action of hydrogen and nitrogen on saccharine solutions speedily effects the transformation of the sugar. Now, ammonia ( $\text{NH}_3$ ) may prove useful in diabetes, by destroying the superfluous sugar in the blood, and also in the cells of the liver. Animal food, from its nitrogen, may act in the same manner. In this way chemistry affords a rational explanation of the mode in which these and other remedies act. Such is the proper position of this science—not to lead the physician, but to explain to him the rationale of his experience and observation.



The preparations of soda, potass, and lime, have not been in my hands productive of any permanent benefit. A reduction in the quantity of urine follows their employment at first, but in a very short time this influence is lost, and the urine reaches to its former abnormal standard. I would explain Mialhe's success by the fact, that he always combined opiates with the alkalies.

III. *Cod-Liver Oil*.—I was led to give this remedy a trial from the following considerations:—

1. From numerous cases having been published in the British and foreign periodicals, showing very beneficial effects from its use.

2. From the very frequent association of phthisis and other forms of scrofula with diabetes.

3. From the extremely rapid disappearance of fat during an attack of the disease.

4. From the important influence which the oil exerts over nutrition.

5. From Bernard's experiments, which show that the liver exercises the function of assisting in the formation of fat from the results of the digestion of saccharine and farinaceous substances. The loss of this fat-producing function may possibly hold a very intimate relation to diabetes. The saccharine matters may pass into the blood, instead of being transformed into fat. Hence the sugar in the urine—hence the loss of fat and the emaciation, the presence of oil-globules in the blood being necessary to assimilation and nutrition. Cod-liver oil, by the ease with which it is digested—some writers, indeed, assert that it passes immediately into the general circulation, without traversing the portal system—would very effectually supply the loss.

6. Fatty matters were recommended as articles of diet by Rollo and others, as exceedingly appropriate to diabetic patients, and found to be remarkably beneficial.

From these circumstances I was induced to give the oil a trial, and from the trifling experience which I have had of it in the cases quoted, I am led to entertain a very high opinion of its efficacy. I would, therefore, respectfully recommend it to the notice of the profession.

IV. *Blisters to the Hepatic Region and Nape of Neck*.—I confess these I employed in consequence of Bernard's experiments. I was the more readily induced to apply them over the liver, from the frequency with which this organ and the other abdominal viscera exhibits symptoms of congestion. I am convinced their application to the hepatic region was beneficial. I consider cupping or leeching the same part would be found advantageous, provided the strength of the patient would permit.

I cannot say that I could perceive any advantage from counter-irritation to nape of neck.

V. *Muriated Tincture of Iron—Hydrocyanic Acid*.—I have found the former useful when the patient's appetite began to fail from the continued use of opium. I conceive that it merely acts as a tonic, and possesses no specific influence. The latter I only employed in the last

case, and from the short time the patient remained under observation, I am not enabled to say anything respecting its influence. I was led to employ it from the effect which it has in reducing the excitability of the medulla oblongata. I consider it worthy of a fair trial.

VI. *Diet and Regimen*.—A restricted diet was employed in some cases for a short time, in order to demonstrate to the students, that no real benefit followed the practice—that, even under the plan, the quantity of urine was only temporarily reduced, whilst the poor patients were rendered most uncomfortable from the restriction, and actually became much more enfeebled. The result of my experience is, therefore, opposed to a restricted diet. Doubtless we can reduce the amount of urine but, simultaneous with this diminution, we reduce the flesh and strength of our patient. The cases which are contained in this paper fully confirm these statements. Again, the experiments of Bernard entirely discountenance such restrictions. I do not understand how any physician can now continue to harass his patients by this plan of treatment after it has been demonstrated that the sugar is formed *from* the blood, independent of the kind of food taken. It is formed when not a particle of saccharine or starchy matter is swallowed, and when the food consists entirely of animal substances. A much more plausible practice would be to feed the diabetic on farinaceous and saccharine matters, so as to prevent *the use of the blood* by the liver in its sugar-producing function. At all events, I think it must appear self-evident that the withholding of a mixed diet from the patients is an act of cruelty. It renders them miserable, at the same time diminishes their strength, and I am afraid often hastens their death.

VII. *Bath*.—The warm bath was ordered occasionally to the patients, merely to maintain proper cleanliness. I do not understand how we can expect much benefit from profuse perspiration. We can only reduce the watery part of the urine to a slight extent; but the augmented specific gravity proves that we have not mitigated the disease; nay, probably, on the other hand, the strength has been somewhat reduced by the extra loss of fluid through the skin.

PRACTICAL SUMMARY.—From the foregoing considerations, I conceive the following conclusions are justified:

1. Opium has a most powerful effect in diminishing the quantity of urine, but does not cure the disease.
2. Ammonia seems to possess, at least in some cases, the power of reducing the amount of urine, the specific gravity, and quantity of sugar.
3. Opium and ammonia combined have a most beneficial effect.
4. Cod-liver oil alone is beneficial—it improves the general condition of the patient, reduces the quantity of urine, and lessens its specific gravity.
5. Cod-liver oil combined with opium, rapidly improves the strength of the patient, and reduces the urine.

6. The combined use of cod-liver oil, opium, and ammonia, effects the most prompt and permanent benefit.

7. Blisters to the hepatic region are useful.

8. The restriction of diet is rather baneful than beneficial. A mixed generous diet is the best.

9. In the present state of our knowledge, we can only expect to improve the general condition of the patient, restrain the waste of tissues, maintain the vigor, and reduce the amount of urine. In this way we can mitigate the disease, and protract the life of the patient. We are bound to confess that we have no cure for diabetes. It is not the only disease which defies the efforts of our art. In many other affections, we can only palliate suffering and prolong existence. These objects we can very satisfactorily accomplish in diabetes, by the judicious use of cod-liver oil, opium, and ammonia.

But it may be asked, how are we to explain the instances of reported cures that from time to time are published, ever and anon exciting our hope that an agent has been placed in our power by which we can secure an easy victory over the disease? My answer is two-fold. 1st. That such cases may have been of a mere temporary nature; a character under which diabetes is sometimes presented. 2dly, That in many of the published cures, an erroneous diagnosis may have been made in consequence of the use of Moore's or Trommer's tests, both of which are deceptive, a brown precipitate being produced by the presence of other organic matters as well as by sugar. I would admit no case as genuine diabetes unless the yeast test had been employed. I do not speak from conjecture on this point; but from experience. Indeed, I fell into this very mistake some years ago, in consequence of this brown deposit. The fallacy was pointed out to me by the late Dr. McGregor. I have reason to suspect that many of the cases that have been published regarding the presence of sugar in the urine of old persons, especially when labouring under disease of the lungs, the deoxidation of the copper is effected by some other organic matter, and not by sugar. I have often, in such cases, been able to produce a brown sediment, but I have always failed to effect fermentation.—*Glasgow Med. Jour.* July, 1856.

#### ART. V.—*On the Influence of Circumcision in Preventing Syphilis.*

MR. Jonathan Hutchinson says: "The Metropolitan Free Hospital being situated in a locality in which many Jews reside, its out-patient's room furnish a good field for estimating the relative prevalence of different diseases amongst them and others. The following statement of my past year's experience as to venereal diseases appears to have some importance, and I am induced to communicate it at the present time with especial reference to a paper which appeared in the 'Medical Times and Gazette' of November 17, from my friend Mr. Cooper For-



ster, recommending the more general practice of circumcision as a preventive of certain diseases of childhood. My Jew patients have, I believe, been in proportion of nearly one-third to the others. The subjoined Table shows the proportion of the two classes of venereal disease.

	Total of Venereal Cases.	Gonorrhoea.	Syphilis	Proportion of Gonorrhoea to Syphilis
Not Jews.....	272	107	165	0.6 to 1
Jews.....	58	47	1	3.4 to 1

Thus we find that, notwithstanding a gross proportion of nearly one-third to others, the cases of syphilis presented by Jews are only as one to fifteen. That this difference is not to be accounted for, either by their superior chastity, or by their unwillingness to seek medical aid for such diseases, is conclusively proved by the fact that they furnish very nearly half the cases of gonorrhoea. The circumcised Jew is, then very much less liable to contract syphilis than an uncircumcised person. This conclusion has, I believe, been long entertained by many surgeons of experience, but I am not aware that it has ever before been made the subject of demonstration. No one who is acquainted with the effects of circumcision in rendering the delicate mucous membrane of the glans hard and skin-like, will be at a loss for an explanation of the circumstance.—Taking, then, this fact as established, it suggests itself as probable that circumcision was by Divine command made obligatory upon the Jews, not solely as a religious ordinance, but also with a view to the protection of health. Among them promiscuous intercourse was certainly not regarded in the benious light which it is under the present dispensation, while polygamy and concubinage were openly permitted. One is led to ask, witnessing the frightful ravages of syphilis in the present day, whether it might not be worth while for Christians also to adopt the practice. Such a proposition, if intended only to protect the sensualist from the merited consequence of loathsome vice, would, as it is to be hoped, be dismissed at once by every right thinking man. But the matter is much wider. In syphilis the innocent suffer with the guilty, and the wife and children have often to bear the penalty of the sin of the husband and father. During the period from which the statistics just adduced have been obtained, I have had under my care at the hospital a total of 252 children under the age of five years. Of these, 179 have been of Christian parentage, and 73 of Jewish. Among the former have occurred 27 cases of congenital syphilis, while among the latter there have been but three. Thus it would appear that but one-twenty-fourth of the surgical diseases of Jewish children acknowledge a syphilitic cause, while no less than one-sixth of those of Christians are of such origin. In this calculation I omit altogether the numerous diseases which are, in all probability, remotely dependent on syphilis, and comprise those only which present the disease in a well-marked form. The

same inferences are pointed out by counting the proportion of syphilis cases in women. Of a total of 97 women who have, during the years come under treatment for one or other form of venereal disease, 92 have been Christians, and 5 Jews. Of the 91 of the former, no fewer than, 61 have suffered from syphilis, and at least two-thirds of these have been married women, who, there was every reason to believe, had contracted the disease from their husbands without any fault of their own. With regard to its being the duty of the surgeon invariably to remove the prepuce of infants born with congenital phymosis, which Mr. Forster, in the paper referred to, so ably points out, I have long held a similar opinion with his own. That opinion, together with some reason for it, are recorded at page 415 of the "*Medical Times and Gazette*" for October 23, 1852.—*Medical Times and Gazette*.—*Glasgow Med. Jour.*

ART. VI.—*On the Change which has Occurred in the Character and Requisite Treatment of Inflammatory Diseases of the Lungs, within the Last Four or Five Years, in the Eastern Townships.* By F. D. GILBERT, M. R. C. S. L., Hatley, E. T.

IN writing as briefly as possible on the above subject, my object is two fold, viz., to induce communications from other parts of the province, with a view of eliciting information, as to whether the change I have observed in this locality is general, as well as to endeavor to draw the attention of my younger professional brethren to a subject, I believe, of great importance in the treatment of one of the most frequent and often fatal diseases incidental to this climate.

Twelve or thirteen years ago, when I first arrived in this country, sthenic inflammation of the various tissues of the lungs was, especially during the colder months of the year, I believe the most prevalent of any dangerous disease in my practice, and in no part of the world had I ever seen active antiphlogistic treatment, generally, better borne or attended with greater success in the treatment of these diseases; discrimination being, of course, had to the difference in the length to which this was carried between bronchitis and inflammation of the other tissues.

Typhoid fever was then a perfectly unknown disease in this vicinity, but about eight years ago, I believe in the summer of 1847, a few scattered cases occurred, all evidently imported from Montreal; these gradually increased in number until, I believe, I can safely assert there has never been a time for the last four years that I have not had one or many more cases under treatment; and I am under the impression that it is owing to the peculiar change in the state of the human system—probably induced by some atmospheric influence having rendered this disease, heretofore unknown, a now very prevalent disease—which is the cause of alteration I have noticed in the diseases of the lungs. In

January, 1850, I left Canada and was absent two years; previous to that time I had not observed any difference in the character of lung diseases, excepting, of course, occasional instances of disease as a concomitant or sequelæ of typhoid fever. Immediately on my return, however, I discovered that cases (apparently) sthenic pleuro-pneumonia did not bear active antiphlogistic measures with the same tolerance as heretofore, but that, on the contrary, asthenia was readily induced, and a stimulant course of treatment required.

Of course some instances of this kind had occurred in my practice both here and in England formerly, so that for, perhaps, the first 12 or 15 cases—though after the first two or three cases I was more guarded in my treatment—though, thinking it singular I should have so many cases of this kind in rapid succession, I did not suppose any permanent change in the character of these diseases had occurred.

I am now, however, perfectly satisfied from the result of a vast number of cases, scattered over a large area—as my practice is—of fully 20 miles square, with a population of some five or six thousand, and extending over a space of upwards of four years, that a very material change has occurred in the character and consequent requisite treatment of this important class of diseases. In fact, I now certainly consider a case of true sthenic pleuro-pneumonia or bronchitis—the latter, however, the most common—more the exception than the rule in my practice.

Should what I have observed, and am positive of, as an established fact in my practice, prove to exist generally throughout the province, I would beg to call the earnest attention of my confrères to the able remarks uttered years ago, by “the Stokes” of Dublin, in reference to the lung complications of typhus; the purport of which was, that we should always bear in mind, that though we may, and often do, find all the physical signs of inflammation of the various tissues of the lungs in cases of typhus, yet that we should be in grave error did we attempt to treat them as such cases; and that, in fact, though we have even dulness on percussion, pectoriloquy, crepitant râle, and dyspnoea, yet there is absolutely no inflammatory action as the result of various treatment evidenced, particularly in the rapidity with which excessive dulness—which, if caused by inflammation, would form hepatization, and require a long time for its disappearance—would disappear under generous diet, and the free administration of stimulants internal and external.

The sum of my observation on the above would be to suggest the propriety in every case of apparent inflammation of the lungs—especially pleuro-pneumonia or pneumonia—of using more than ordinary care in ascertaining the history of the case, how long it has been supervening, the state of the tongue, whether there is unusual dulness in an unusually short time after the invasion of disease, the hardness or otherwise of the pulse, whether much headache, and the previous state of the liver, stomach, and bowels. And even if all these symptoms indi-



cate sthenic disease, after the first sufficient venesection, with the administration of calomel and antimony, &c., watch the patient closely, and if asthenia appears at all likely to supervene, lose no time in throwing away the calomel and antimony, and administer squill, senega or sulphate of zinc--- the latter with decoctum senega I prefer--and apply spt. terebinthinae with hot water in small and often-repeated patches over the whole thorax, with a tolerable diet and pretty free use of brandy, Holland gin, or port wine.---*Glasgow Med. Jour. July, 1856.*

ART. VII.—*The Treatment of Scarlatina Anginosa* : By PYE H. CHAVASSE, ESQ., F. R. C. S.

THE system I adopt, in a case of scarlet fever, is to keep the bed-room cool—I may say cold—and to have a thorough ventilation through it ; I, therefore, throw open the windows, be it winter or summer, and have the curtains and valances of the bed removed. If it be winter time, I allow the patient to have one blanket and a sheet ; if it be summer time, a sheet only to cover him. If the throat be not seriously affected, I merely order a narrow strip of flannel once round the throat. If the tonsils be much enlarged, I apply a barm and oatmeal poultice to the throat, changing it night and morning. I prescribe an acidulated infusion of roses mixture, that is to say, infusion of roses, with an excess of acid, made palatable with an additional quantity of syrup, to be taken every three or four hours. This is the only medicine I give. Where the child is old enough, I find roasted apples mixed with raw sugar, very grateful to the patient.

Here let me pause, to advise my medical brethren always to make medicines for children pleasant. The administration of nauseous medicine to children oftentimes causes sickness, disgust and irritation, which frequently do more harm than the medicine does good.

But to return to our subject : I avoid purgatives in scarlet fever. I never, on any account whatever, give a particle of opening medicine for the first ten days at least. It is my firm conviction, that the administration of purgatives in scarlet fever is a fruitless source of dropsy, disease, and death. When we take into consideration the sympathy that there is between the skin and mucous membranes, I think that we should pause before giving irritating medicines. The irritation of purgatives on the mucous membrane may cause the poison of the skin disease to be driven internally to the kidneys, throat, pericardium, or brain. You may say, do you not purge if the bowels be not opened for a week ? I say emphatically, no !

Now with regard to food. If the infant be at the breast, keep him entirely to it. If he be weaned, and two years old, give him milk and water, and cold water to drink. If he be older, give him toast and water, and plain water from the pump, as much as he chooses ; let it be

quite cold---the colder the better. Weak black tea, or thin gruel, may be given, but caring little if he take nothing but cold water, unless he be an infant at the breast. Avoid broths and stimulants of every kind.

Now, you must warily watch for a change of temperature of the skin. As long as the skin is hot, the above plan I steadily follow ; but the moment the skin of the patient becomes cool, which it will do probably in five or seven days, instantly close the window, and immediately put more clothes on the bed. But still do not purge.

You will find the acidulated infusion of roses most grateful to the little patient ; it will abate the fever, it will cleanse his tongue, it will clear his throat of mucus, it will, as soon as the fever is abated, give him an appetite. I believe, too, the acid treatment has some peculiar properties of neutralizing the scarlatina poison. I do not pretend to explain how, or why, or wherefore.

When the appetite returns, you may consider the patient to be safe. The diet must now be gradually improved. Bread and butter, milk and water, and arrowroot, made with equal parts of milk and water may be given for the first two or three days. Then a light batter or rice pudding may be added ; and, in a few days afterwards, a little chicken, or a mutton chop.---*Braithwaite's Retros.*---*From Asso. Med. Jour.*

*Remarks.*---In scarlatina the bronchiæ, trachea, pharynx and nares, are often loaded with dense inflammatory mucosities and morbid excretions greatly obstructing the respiratory function, while they add both to the local and constitutional irritations incidental to the disease. The dislodgement of these accumulations by means of a mild emetic of Ipecacuanha, repeated occasionally as required, is highly beneficial, acting not only by the expulsion of dense mucus and lymph, but also as a revulsive, expectorant, and diaphoretic. Gargles so much relied on, have but a very limited application.

The absolute exclusion of mild purgatives cannot be defended upon rational principles. It is true, that the advocates for active purgation, base their therapeutics upon the principle of revulsion, hoping as they contend, to diminish thereby cerebral and other visceral congestions. This plan, however, is likely to have the opposite effect, especially if carried to an extreme.

Admitting that neither violent nor even oft-repeated purgatives of the mildest kind are advisable in this disease, there can be no well-founded physiological or therapeutic reason why the removal of the accumulated faeces and morbid excretions in this malady, should be, as some contend, dangerous, since the retention from day to day of these offensive, effete, purulent, and poisonous masses must be a source of irritation to the mucous membrane of the bowels far greater than that temporary disturb-

ance incidental to their removal by enemata and the occasional use of the mildest purgatives. The acrid secretions and excretions in this malady which sometimes issue from the throat, mouth, and nostrils, excoriate the skin, and their absorption into the system, cannot be otherwise than deleterious, if analogical reasoning be allowable.

It is difficult to imagine any reason why sponging with cold or tepid water, should not be beneficial to Mr. Chavasse's patients, seeing that he urges thin covering, cold air and drinks as curative agents. Indeed, the peculiar harsh and obstructed state of the skin in scarlatina, indicates the advantages likely to result from sponging, independent of its refrigerating property.—*Ed. N. O. Med. & Surg. Jour.*

ART. VIII.—*On the Treatment of Fever by Large and Frequently Repeated Doses of Quinine.* By DR. THOS. B. PEACOCK, Assistant Physician to St. Thomas' Hospital.

THIS method of treatment was first brought before the profession in 1851, by Dr. Duncan of Liverpool. It has since that time been tried by many very eminent practitioners, and with varying results. In the hands of some it has entirely failed, while with others it has been equally successful. Dr. Hughes Bennett, Dr. Christison, Dr. Robertson, of Edinburgh, have reported unfavorably of it; Dr. Graves of Dublin, Dr. McEvers of Cork, Mr. Hayward of Liverpool, and Mr. Fletcher of Manchester have obtained the most beneficial results from its employment.

The method of treatment adopted by Dr. Dundas, is as follows:—an emetic is first administered, and then ten grains of quinine are given every two hours till the symptoms subside, or till tinnitus aurium or deafness supervenes, when the remedy should be stopped. After an interval of about eight hours, another emetic should be given; and, after a further period of eighteen or twenty-four hours, the quinine treatment should be recommended. If there be restlessness or want of sleep, a full dose of liquor opii sedativus should be given, with a few drops of nitric acid; and wine and other support should be administered as required.

The period during which the large doses of quinine were usually repeated, in Dr. Dundas' practice, is not stated; but in two cases, which he quotes as examples of the beneficial operations of the remedy, three doses only were exhibited. The precise plan however recommended by Dr. Dundas has been more or less deviated from by all the practitioners who have reported the results of their experience, both as regards the dose in which the quinine was administered, and the frequency with which the remedy was repeated.



Dr. Goolden gave in one case 10 grains every two hours for eighteen times, in another 8 grains every two hours; but he does not mention how often the latter one was repeated. Dr. Stevenson in one case administered 12 grains every three hours for twenty times, and afterwards continued 3 grain doses every four hours for about two days longer. Mr. Glazebrook gave in one case 8, in another 15 grains every two hours. Mr. Hayward exhibited the remedy in doses of 4 or 5 grains, and never exceeded 7 grains, every two hours. Dr. Gee and Mr. Edlowes gave 3 to 10 grains every two or three hours. Dr. Bennett in one case administered 10 grains every two hours for five times; in another, at first 10 grains every two hours for seven times, afterwards 5 grains at the same intervals for five times; in a third case, he gave 10 grains every two hours for six times, and then, at first 10, and afterwards 13 grains for a dose, at the same periods; but the time during which the remedy was continued is not mentioned. Dr. M'Evers exhibited the remedy in the doses recommended by Dr. Dundas, giving in one case 10 grains every two hours for six times in one day, and then every three hours for four other times; in another case every two hours for three times in one day, and the following day three other doses at the same intervals; in a third case 10 grains every two hours for five times in one day, for six times on the following day, and for four times on the third day. In a fourth case he gave 10 grains every two hours for two days, and during the third day the same doses every four hours. In the cases observed by Dr. Barclay, one patient took 10 grains every two hours for ten times, a second 20 grains every six hours for three times, two others 20 grains every four and every six hours for eight times, and a fifth 20 grains every three hours for nine times. Mr. Fletcher in one case gave 12 doses of 5 grains each to a girl of 12 years of age, at intervals of two hours; to an adult he gave 6 grains every three hours, but the precise number of doses given is not stated; and to a third patient, who died of pneumonia, he exhibited six grains every three hours for five days, after which antiphlogistic treatment was had recourse to.

The different writers who have alluded to the effects produced by the employment of the large doses of quinine agree generally in their reports. Dr. Dundas mentions that, after the exhibition of three or four doses, the specific influence of the drug is generally manifested by the occurrence of vertigo, tinnitus aurium, deafness and diminished frequency of the pulse; to these symptoms Dr. Barclay and Dr. M'Evers add vomiting as of occasional occurrence; and the former gentleman mentions that in some cases the depressing influence of the drug on the heart and arteries are the only obvious effects. Confusion of ideas, torpor, and more or less coma, are also referred to, as resulting from the use of the remedy; but, as justly stated by Dr. Barclay, as these symptoms in many cases naturally ensue with the progress of fever, it is sometimes difficult to say how far they may have been referable to the one or other cause. Dr. M'Evers mentions the physiological effects of the

quinine as manifested in one case at the end of three doses, and as recurring on the following day when the same quantity had been given. In a second case, they appeared after the exhibition of fifteen doses in three days, and in a third after 24 doses given in two days. The symptoms mentioned are similar to those which, as related by M. Briquet and others (quoted MM. Trousseau and Pidoux,) were observed in the treatment of typhoid fever of Paris by doses of quinine varying from 1 to 3 or 4 grammes (15·4 to 16·6 grains,) exhibited during the day, according to the severity of the disease. M. Briquet arrived at the conclusion that quinine was useful in the ataxic form of typhoid fever, assuaging the watchfulness and delirium ; but that it was prejudicial in the adynamic form, with great prostration of strength.

I have before mentioned that Dr. Dundas, in his earlier communications, spoke of the manifestation of the specific influence of the quinine, as indicating the necessity for the discontinuance of the drug, at least for a time ; but Dr. Gee and Mr. Eddowes do not regard the occurrence of tinitus aurium and deafness as always requiring the suspension of the remedy : and Dr. Dundas, in a subsequent allusion to their opinion on this point, seems disposed to concur with them.

The general results of the treatment may be stated as follows :

1. In one of the cases of typhus, the quinine was certainly not productive of any benefit, and probably added to the torpor and depression of strength. In the other case of typhus it produced the most marked depression, and the patient was only saved by its discontinuance and the liberal exhibition of stimulants. In both cases, though the patients recovered, the disease seemed to follow its natural course, and to be in no degree curtailed in duration by the exhibition of the remedy.

2. In one case of typhoid, the depression of power and torpor increased under the use of the quinine, but the notes are too imperfect to allow me to speak confidently as to its effects. The patient recovered after an illness of average duration.

3. In two other cases of typhoid, the remedy appeared to exert neither beneficial nor injurious effects ; the disease followed its usual course, and the patients recovered.

4. In another case of typhoid, it certainly added to the torpor and depression. The remedy was only exhibited in small doses, and for a short period, and was entirely discontinued after six doses had been given, in the course of a day and a half, and stimulants and other means were then freely had recourse to ; the prostration and torpor, however, increased, and the patient died comatose.

5. In the fifth case of typhoid, in which the affection was combined with bilious complication, the quinine was decidedly beneficial, the patient steadily improving under its use. The attack was certainly of shorter duration and less severity than might have been expected from the urgency of the symptoms when the treatment was commenced ; but, in this case, the amendment was gradual, and no sudden improvement in the symptoms at any time occurred.

In all the cases the patients had stimulus and support as required, and other accessory treatment, such as astringents, aperients, and anodynes, &c. While also the quinine was exhibited in the various cases in different doses and at various intervals, the different results bore no relation to any of these circumstances.—*Braithwaite's Retrospect. From the Med. Times and Gaz.*

ART. IX.—*On the Hemorrhagic Diathesis.* By DR. HYDE SALTER, Assistant Physician to Charing-Cross Hospital School, and Assistant Physician to the Hospital.

[In order to obtain correct physiological views of this subject, we must inquire, What is the anatomical condition of hæmorrhage? We may define it to be the rupture, or rather a solution of the integrity, of the wall of a sanguiferous vessel. The general opinion is, that blood may escape from its vessels by *rupture* and by *exhalation*. Dr. Watson says, "There seems no more necessity under the action of disease for a rupture of vessels to give exit to the blood, than to give exit to mucus, serum, or sweat;" but he cannot tell us how this takes place; indeed, we know that it is impossible, physically impossible, for blood to escape from capillary vessels without their rupture. In the first place, they have no natural apertures through which any solid particles can escape; and, in the second place, blood-globules are cells of definite shape and size, incapable of transuding an imperforate membrane, or of solution, except by their destruction. The escape of serum through the vessels is a different thing. The exhaled material here is entirely fluid, and the process is physical; whereas the escape of blood-globules is mechanical. Instead of accepting the exhalation theory of hæmorrhage, we believe the immediate pathological condition on which it depends to be a morbid friability of the capillary walls, so that they rupture under the slightest force; it is, therefore, a textural disease of the capillaries.]

What makes the capillary membrane unduly friable? It must be some vice in its nutrition, whereby it loses some of its normal physical properties—its toughness, and power of resistance. And on what does this vice of nutrition depend? Here we are met by two possible explanations:—one, that it depends on a quantitative or qualitative deficiency in the blood of that particular plastic material on which the capillaries draw for their nutrition; the other, that the blood being in no way divergent from the normal standard, the deficiency resides in the capillaries themselves, that their nutritional affinities are debased, their plastic power depressed, and that thus they fail to form from the healthy material presented to them for their recreation the proper quantity or proper quality of tissue. Of these two theories, the first is the one I am disposed to adopt; it seems to me the most simple, the most plausible,



and the most probable. All *diathetic* textural degenerations, with which I am acquainted, are blood diseases---primarily humoral. We may, probably, never detect what this specific peculiarity of the blood is, any more than we may in *struma* or *cancer*; but it is not the less theoretically probable. If, then, I were asked, what is the essence of the *hemorrhagic diathesis*, I should say, that it consists in a vice of assimilation issuing in a special spanæmia, the blood being poor in that particular material from which the capillaries---perhaps homogeneous membranes generally---derive their nutriment. We know that the relations between the blood and tissues are infinitely subtle, and delicate, and complex, and there seems to me nothing far-fetched or imaginative in such a theory.

The view that the disease consists essentially in depressed assimilative power, is confirmed by the circumstances that produce and aggravate it: deficient or bad food, overwork, cold, damp, and darkness, irregularity of life, and exhausting excesses, are its most fruitful causes; and old age, the time of life characterized especially for failure of the assimilative powers, is the time in which it is most pronounced---indeed a special form of it, known as *purpura senilis*, has received its name from this very circumstance. That the spanæmia is *special* not *general*, that the blood is poor in some particular material, and that it is not a general poverty, we are sure, because we know that, even in extreme cases, the general nutrition may be unimpaired, all the other tissues well nourished, and because we see that there are only certain people in whom the disease can occur; that in some any source of depression will bring it on at once, while in others you may have starvation, exhaustion, and depletion, almost to death, and a condition of the extremest general blood poverty induced (as for instance after protracted illness, or in women by flooding,) and yet not the slightest disposition to capillary hemorrhage.

[We will now very briefly mention the case of a woman, aged 50, lately under treatment. When first seen as an out-patient, there was a general bruised and speckled condition of the surface, she had no hemorrhage from other parts, and had been in this state for about three months; shortly after this time her gums began to bleed, and although it stopped in a few days it began again and continued to increase until she spit about two quarts daily; she was getting very weak and faint in consequence. When first seen, she was ordered sulphuric acid and iron; but when the bleeding from the gums came on, she was ordered an alum lotion, and a mixture of alum, sulphuric acid, and decoction of bark; as the bleeding still continued she was advised to come into the hospital.]

Let us now, assuming as granted the pathology of the disease as I have above enunciated it to you---that it is special spanæmia or blood dyscrasis, issuing in the deterioration and debasement of a special tissue---inquire what our treatment ought to be. It should, in my opinion, involve these three things.

1. The supply of an abundant and generous diet, rich especially in those alimentary principles which are plastic or tissue-forming ; that is, those belonging to the albuminous group.

2. The administration of such medicines as increase and invigorate the powers of assimilation, and, therefore, of healthy sanguification, either through the nervous system, or by appealing immediately to the organs of digestion ; such are tonics.

3. The arrest and prevention of hæmorrhage, by using all available means of stopping bleeding, and by the exhibition of local and general anti-hæmorrhagics.

The last is the treatment of symptoms ; the first two, of the absolute pathological condition ; the last is directed to the arrest of a drain, by the continuance of which, and the consequent impoverishment of the blood, the disease becomes self-supporting, and by which, in fatal cases, it ultimately exhausts the patient ; the first two, to the production of a fabric of good quality by the supply of a good and abundant raw material, and by increasing the efficiency and working power of the fabricating machine. Two elements of this threefold treatment---the first and the last---are absolutely necessary. Unless the standard of the food is kept up the blood must suffer ; we see how efficient a debased food alone is in producing capillary hæmorrhage, in the allied disease of *scurvy* ; and unless the drain of the hæmorrhage is stopped, the blood cannot recover itself, for its most precious elements thus draughted away are replaced principally by water, and are themselves slow of recrement ; to give food and medicine without stopping the bleeding, is, to use an expressive vulgarism, like "saving at the tap and letting out at the bung-hole."

It was with these principles in view that I treated the case, and its subsequent-history is told in a few words :---

When she came in, which was October 16, I ordered her to take, three times a day, the following draught---Acid. gallic. gr. v., acid. sulph. dil. mxx., dec. cinchon. ℥iss. I put her on full diet, and gave her in addition, a mutton chop, two or three eggs, and a free supply of milk daily.

The report of the 18th is :---Not so well ; the bleeding from the mouth profuse ; the teeth clogged and clotted ; several handkerchiefs saturated ; one large ecchymosis on the tongue, black in color, and covered only by the epithelium, as big as a sparrow's egg, and several smaller ones---the smaller ones seem to have their seat in the fungiform papillæ. She was ordered, for neuralgic pain in the course of the sciatic nerve of the right leg, a liniment, of equal parts of lin. opii and lin. camph., to be rubbed in night and morning.

19. The mouth still bleeding freely, the patient very much exhausted, flushed face, feverish, and restless. Ordered---Ol. terebinth., to be freely applied to the mouth three times a day, with a sponge.

22. The turpentine has completely stopped the hæmorrhage from the mouth. A large ecchymosis formed during the night as big as an egg,

the loose areolar tissue beneath the left tendo-Achillis, from which she lost half-pint of blood. The spots of both kinds are scattered as thickly over the body as ever, covering the entire surface with patches and specks of all colors. Very little sleep; pulse weak and rapid. Ordered--Acid. sulph. dil. m xx., ferri sulph. gr. iv.; magnes. sulph. 3 ss.; inf. calumb. 3 iss.; to be taken three times a day. The liniment to be continued, and the following pill to be taken every night, to secure some sleep--Morph. hydrochlor. gr.  $\frac{1}{2}$ , extr. lactu. gr. iv.

[After this time she slowly improved. The spots began to fade, and no fresh ones appeared, her appetite was good, bleeding ceased, skin was clear, and she soon left the hospital cured.]

I think she owes her great improvement to her high living and the tonic medicine, especially the iron; you will observe, that it was within two days after commencing to take 12 grains of sulphate of iron a day she began to improve. She has taken that ever since, and she must continue to do so. She attributes, herself, the cessation of the hemorrhage to taking black-current jelly; but my own opinion is that it had nothing to do with it, but that she happened to take some when the iron was beginning to tell upon her. On leaving she will have to take great care, and to continue the same diet and medicine, in order to avoid relapsing into her former condition. I do not consider her *cured*. I do not think such a case admits of cure, in the strict sense of the word; it will be liable at any time to recur, and any source of depression may reintroduce it: but it is, for the present at any rate, most efficiently controlled.

On watching the gradual disappearance of petechiæ and vibices under the administration of such medicines as mineral acids and iron, the question naturally suggests itself to one's mind: How do these medicines act as anti-hemorrhagics in such a case as this; how do they check capillary hemorrhage? Do they act merely as tonics and favor the production of a less friable capillary wall by improving assimilative power, or as general styptics also? I believe the former, and not the latter. I believe the circumstances of the case render it impossible that they can act as styptics? We know that great dilution destroys styptic action; acids no longer act as styptics when neutralized by alkalies. I think it, therefore, impossible that the anti-hemorrhagic action of such a medicine as sulphuric acid for instance, introduced in doses of a few drops in a dilute condition into from 20 to 30 pounds of blood containing carbonate and tribasic phosphate of soda, and permanently alkaline, can have anything styptic in its *modus operandi*. Iron has clearly the additional advantage of supplying an essential material.

Let me now, in conclusion, just briefly recapitulate the points that I would particularly press on the attention.

1. That the disease is a disease of nutrition--a special error in assimilation, resulting in a special structural lesion; that, although there are some forms of it that would make one think that it depended on some special vice of nutrition in the minute sanguiferous vessels themselves,



as, for example, where it occurs in florid, well-nourished, and otherwise healthy subjects, yet that there are other considerations that tend to throw back the starting-point of the mischief to an earlier stage of the process of assimilation, and to imply that it takes its origin in an imperfect sanguification. That the speciality of the nutritional vice, and its restricted locality, in no way contravenes the view that throws so far back, and on the general medium of nutrition, the origin of the textural degeneration; for we know that, even in health, the relations between special local nutritions and special blood elements are infinitely complex and infinitely delicate, while in disease there seems no limit to the specific structural derangements dependent on specific pathological conditions of the blood---witness skin diseases. The circumstances that induce us to throw on primary assimilation the onus of the mischief, are :

*a.* That the causes that aggravate the disease are those that impair sanguification.

*b.* That the evidence associating the hemorrhagic tendency with a condition of blood below par seems indisputable.

*c.* That the diathetic cachexies with which it is associated are those depending on specific primary mal-assimilation, *e. g.* rheumatism.

(With regard to the physical condition of the blood associated with the hemorrhagic tendency, we must not forget that the hemorrhage itself gives rise to a condition of blood below par, and thus that its watery condition may hold the place of a result, and not a cause.)

2. That the pathological condition is anatomical, and the special morbid anatomy, *ruptured capillary*.

3. That it cannot be explained by a mere qualitative derangement of the blood, an imperfect coagulation, or anything of that sort, as no change of the blood's qualities can explain the transit of blood cells through healthy capillary wall.

4. That the disease is eminently diathetic, the symptoms that show it being :

*a.* Length of time---the symptoms being sometimes manifest throughout the entire life of an individual.

*b.* Inheritance---a circumstance invariably involving diathesis.

*c.* Association with other diathetic conditions, as complexion, and diseases of undisputed diathetic character, *e. g.* rheumatism.

5. That, however, as shown by the second case I have narrated, the diathesis may either be latent through a long life, and developed by external agencies, a fact not at all inconsistent with its diathetic nature---witness struma, gout, rheumatism; or, secondly, that it may be acquired late in life; or, thirdly, that sources of depression and exhaustion may give rise to idiopathic hemorrhage of exactly similar character, without any diathetic hemorrhagic tendency.

6. That any source of depression will aggravate or induce it---witness the frequency of purpura among the London poor of the worst kind.

7. That it increases with age, age probably acting as a depressant.

8. That it is a disease for which we possess no specific ; that all we can do is to arrest blood loss, and to supply the conditions of healthy assimilation by an abundant and generous diet and the administration of tonics ; that the most valuable of these is iron.---*Med. Times and Gazette, March 15, 1856.*

ART. X.—*On Apoplexy in relation to Chronic Renal Disease.* By W. SENHOUSE KIRKES, M. D., Assistant Physician to St. Bartholomew's Hospital.

THE occurrence of Apoplexy, Congestive or Sanguineous, in connection with advanced disease of the kidneys, has often attracted the notice of pathologists.

An analysis of the fatal cases of apoplexy which have fallen under my own observation, shows that in a large number the kidneys were extensively diseased. I have excluded from this analysis the cases of merely congestive apoplexy, for the same reason that induced me to omit those cases of apoplexy, with and without albuminuria, which have not died, or not been examined after death, namely, because without the visible evidence of extravasated blood within the cranium, it is just open to the objection that one or more of these cases might not be purely apoplectic. I have excluded, also, those cases in which the brain only has been examined after death, or in which but an imperfect inspection of other organs has been made, because with the object at present in view, it was advisable to make use of those cases only in which a complete examination of all the important parts had been performed.

With these exclusions, I find I have notes of 22 fatal cases of sanguineous apoplexy, in which the thoracic and abdominal viscera, as well as the contents of the cranium, were more or less minutely examined after death. Of these 22 cases, the kidneys, in no less than 14, presented unmistakable evidence of disorganization ; and with but few exceptions, the disorganization amounted to the small, hard, shrunken, and granular condition so characteristic of advanced renal degeneration ; the kidneys in the remainder of the 14 cases being generally large and soft, and greasy-looking. So large a proportionate number as 14 out of 22 seems clearly to indicate that the renal disease bears a very close relation to the apoplexy. In order to determine the nature of this assumed relation, however, the analysis of the cases must be pursued farther.

Of the 14 cases in which the kidneys were diseased, there was only one in which the heart was not enlarged. The enlargement in these 13 cases was principally, and often exclusively, confined to the left ventricle. In five there was no valvular disease whatever to explain the

hypertrophy ; in four there was slight thickening, probably not amounting to inefficiency, of the mitral or aortic valves ; and in four only, there was sufficient valvular disease to account for the enlargement of the heart. So that certainly in five, and probably in nine cases the cause of the enlargement was remote from the heart, and might with probability be referred to the co-existent disease of the kidneys. And, even in those cases in which the valves were extensively affected, the renal disease might be supposed to have contributed in some degree to the enlargement which the heart presented.

This part of the analysis, while it confirms the opinion almost generally entertained, that hypertrophy of the left ventricle of the heart is among the most common of the sequences and results of prolonged disease of the kidney, would also seem to furnish us with the true interpretation of the connection so obviously subsisting between advanced renal disease and apoplexy. For the researches of Dr. Burrows and others have placed it beyond a doubt, that disease of the heart, especially hypertrophy of the left ventricle, has a most direct relation to apoplexy, constituting indeed, in many cases, the immediate cause of the attack. And since hypertrophy of the left ventricle, independent of valvular disease, is, as just shown, so apt to follow upon disease of the kidney, we seem to possess herein an intelligible explanation of the occurrence of apoplexy in connection with renal disease ; the hypertrophied heart being in such cases the medium through which the affection of the kidney manifests itself injuriously upon the cerebral circulation. In no other way, I think, can we readily understand how the renal disease should give rise to apoplexy. The impure condition of the blood, resulting from the detention of the excretory principles of urine, is capable of explaining many of the complex and often serious nervous phenomena that are apt to occur in advanced disease of the kidney, but it cannot be supposed to explain, at least directly, the rupture of the small blood vessels of the brain, and the consequent occurrence of sanguineous apoplexy.

A still farther analysis of the 22 cases of sanguineous apoplexy, which form the basis of the present inquiry, will help to explain the mode in which hypertrophy of the heart, whether dependent on valvular or renal disease, or on the two conjoined, or on any other cause, may lead to the apoplectic attack. For of the 13 cases of associated cardiac and renal disease, there were 12 in which the coats of the cerebral arteries were more or less strikingly diseased, while they were diseased also in five other cases, in which the kidneys were healthy, and in three of these latter there was enlargement of the heart. So that of the 16 cases in which enlargement of the heart was associated with sanguineous apoplexy, no less than 15, that is all but one, presented disease of the cerebral arteries. Without bringing into this analysis any results of an examination into the frequency of disease of the cerebral vessels in conjunction with cardiac affection independent of apoplexy, the facts here given will suffice to show that disease of the vessels of the brain is even



more closely associated with hypertrophy of the heart, than the latter is with disorganization of the kidney.

The intimate connection thus apparently subsisting between sanguineous apoplexy on the one hand, and diseased cerebral vessels, enlarged heart, and renal disorganization, on the other, as deduced from the foregoing analysis in a kind of tabular form. The 22 cases of sanguineous apoplexy may stand thus :

Cerebral Vessels.	Heart.	Kidneys.	
Diseased.....	Diseased.....	Diseased.....	12 times.
".....	".....	Healthy.....	3 "
Healthy.....	".....	Diseased.....	1 "
".....	Healthy.....	".....	1 "
".....	".....	Healthy.....	2 "
".....	Diseased.....	".....	1 "
Disease.....	Healthy.....	".....	2 "

---

22

From this it appears that

The Cerebral Vessels were diseased	17 times
The Heart.....	17 "
The Kidneys.....	14 "

It cannot but be evident from this impartial analysis of 22 fatal cases of sanguineous apoplexy in which the different organs were carefully examined, that disease of the kidneys, heart, and cerebral vessels stands in very close relation to the apoplexy ; and this relation is the more evident when it is borne in mind that in more than half of the cases, the kidneys, heart, and cerebral vessels were found coincidently affected while in only two cases was there absence of decided disease of any of these parts

Such being the principle information yielded by an analysis of these cases, two questions seem naturally to be suggested by it : first, what relation do the renal, cardiac, and arterial disease, bear to each other ? secondly, what share do they severally take in the production of apoplexy ? As regards the relation subsisting between the renal, cardiac, and arterial disease, in sanguineous apoplexy, I believe that the affection of the kidneys is the primary disease, and that the other lesions are developed secondarily and in the order just indicated, viz; hypertrophy of the heart, disease of the cerebral arteries, and extravasation of blood from rupture of diseased vessels. That structural disease of the kidneys, of such a nature as to interfere permanently, or for long, with their functions, has among its most frequent and prominent accompaniments a hypertrophied condition of the left ventricle is, as already said, a fact now generally admitted by pathologists. Of the various explanations to this pathological fact, the most probable perhaps is that which regards the blood as no farther altered from its normal constitution by retained secretion or excretion, as to move with less facility through the systemic capillaries, and thus to require increased pressure, and con-

sequently increased muscular growth of the left ventricle, to effect its transmission. To this, perhaps, may be added, among other additional causes, the direct influence on the circulation, resulting from the impeded transit of blood through two such large and vascular organs as the kidneys in consequence of the structural change which has taken place in them. On whatever cause, or set of causes, it may depend, however, hypertrophy of the left ventricle of the heart, in consequence of prolonged renal disease, may, I think, be regarded as a well-established fact; and to the affections of the kidneys, therefore, may be referred the enlargement of the heart found in nine of the 13 cases of associated cardiac and renal affections in the analysis above given, and part of the enlargement noticed in the four cases where the valves were considerably diseased.

The relation borne by the hypertrophied heart, in cases of renal degeneration, to disease of the cerebral vessels, and, through these, to sanguineous apoplexy, will require more detail in its consideration. It is obviously a very close relation, since, as already shown, the cerebral vessels were found diseased in 12 of the 14 apoplectic cases associated with cardiac and renal affection. In all the cases the disease consisted in the well-known yellowish-white thickening and deposit within the coats of the vessels. Into the nature of the deposited material it is unnecessary, for the present purpose, to inquire: suffice it to observe that, whether composed principally of fatty, earthy, or albuminous matter, it must probably be looked upon as resulting from a kind of degeneration of the natural textures of the arterial walls, and as indicating a weakened condition of those parts of the arteries where it occurs.

It is, I think, generally believed, that this affection of the coats of the cerebral, as also of other arteries, either consists of a primary and spontaneous degeneration, or is induced by, and indicative of, some general cachexia, which manifests itself, among other ways, in a tendency to a more or less wide-spread disease of the arterial system. If, however, any more direct explanation can be given of this disease of the arterial coats, it is obviously better to adopt it than to rely on either of the above, which convey but little definite meaning. For, although very various morbid appearances may result from some one diseased state of the system, as from a common cause; yet, when any one of these admits of being reasonably referred to a direct and special agency, it should be removed at once from the category of effects resulting directly from one common origin. And, although it is, no doubt, true; that without any previous disease, but simply in consequence of interference with one or more of the general laws relating to its nutrition, any tissue may undergo a process of degeneration; yet, in the absence of all certain knowledge of any such primary impairment of nutrition, it is better to seek for an explanation of the degeneration in some circumstance which has been known to attend the degenerative process, and to be capable of producing it. In the case of the cerebral or other arteries, although it may be, that in advanced life, the walls may sometimes degenerate

from simple wearing out, just as other tissues atrophy in old age ; yet, when this disease occurs in comparatively early life, and is associated with cardiac mischief, we seem to possess, in the enlargement of the heart, an explanation of the affection more intelligible than that referring it to primary and spontaneous degeneration, or to the result of some general cachexia. Indeed, I think it may be held as highly probable, that the disease, or the degeneration in question is, in a great measure, the result of the continual over-distension and straining to which the arteries are subjected by the unwonted energy with which an hypertrophied heart propels the blood along them. Stretched and weakened in their tissue by long continued undue pressure, it would not be surprising that the arterial coats should undergo structural changes somewhat analogous to the softening and degeneration which other over-strained and excessively-exercised tissues not unfrequently suffer. It may be, that before degenerating, the coats undergo a kind of protective hypertrophy, to enable them to bear up against the increased pressure to which they are subjected, and that degeneration only ensues when this compensating overgrowth has attained its utmost limit ; just as we find degeneration to be more common in hypertrophied than in ordinary muscular tissue, as, for example, in the heart. That such is sometimes the case, viz. that before degenerating, the walls of the arteries exposed to undue pressure undergo hypertrophy, that is, an increase of natural texture and strength, seemed to be shown in the following instance.—A girl, aged 14, previously in apparent health, having spent a day of unusual pleasure and excitement, was seized with a fit in the evening, and left hemiplegic on the right side. The paralysis continued until the child died, four months afterwards. In the anterior lobe of the left cerebral hemisphere was an old hemorrhagic clot ; the brain was otherwise healthy, though the bloody points visible on section were unusually large. The middle cerebral arteries were gaping, instead of being collapsed as they usually are. The left ventricle of the heart was hypertrophied to an enormous extent, the walls being firm and compact, and nearly six times as thick as those of the right ventricle. There was not a trace of valvular disease to account for this enormous hypertrophy. The coats of the aorta were remarkably thickened, the thickness consisting apparently in simple increase in the natural texture of the tunics, which were strongly elastic, smooth on the interior, and apparently quite free from morbid deposit. All other organs were healthy except the right kidney, which was atrophied and reduced to about a quarter the size of the left, which somewhat exceeded the ordinary dimensions. The gland did not seem diseased, but simply wasted. This case, while it showed increased growth of the aortic coats in conjunction with enlargement of the left ventricle, and thus favored the view that hypertrophy of arterial walls may precede their degeneration when the latter is associated with enlargement of the heart, seemed to bear also very closely upon the general subject at present under consideration. For there was evidently a very close pathological connection between the several morbid conditions



found after death, namely, the apoplectic clot, the thickened coats of the aorta, the hypertrophied heart, and the wasted kidney. Why should sanguineous apoplexy occur in a subject so young? Why should the left ventricle be so enormously hypertrophied without any valvular disease to account for it? Why should the coats of the aorta be so greatly thickened without being evidently diseased? The answers to these questions suggested themselves at once. Something, at an early period of the child's life, had occurred to inflict irreparable damage on one kidney; the other had not grown with sufficiently rapidity to supply its place; the elimination of urine had been imperfectly effected, and the elements of this excretion had therefore accumulated in the blood; the left ventricle of the heart had become hypertrophied in consequence of this continued impurity of the blood; to resist the increased pressure on their walls, resulting from the hypertrophied heart, the coats of the aorta growing in proportion to the increasing demand upon them: and so probably the child's life might have been prolonged for a considerable time, had not the heart's action been stimulated to an unusual degree by unaccustomed bodily and mental excitement, and the delicate vessels of the brain yielded to the excessive pressure to which they were in consequence subjected.

Numerous examples, less striking, perhaps, than this, but equally illustrative of the same chain of pathological phenomena, are continually exhibited in the dead-house of a large hospital. I adduce the present case, chiefly to show that simple thickening—a natural hypertrophy without disease—may occasionally be found in arterial walls in connection with enlargement of the heart; and that, therefore, it may be presumed that in many cases of arterial disease associated with cardiac enlargement, the walls of the diseased vessels were hypertrophied antecedent to their degeneration. Whether this be so or no, however, the fact remains, that degenerations of the coats of arteries is frequently found associated with hypertrophy of the heart.

That the degeneration in question is, in a great measure, the effect, and not merely the attendant, or, as some suppose, the cause, of the enlargement of the heart, was an opinion first distinctly enunciated, I believe, by Dr. Dittrich, in a clever essay, containing the results of his investigations into the diseased condition of the pulmonary artery. Generally, it is believed that the pulmonary artery and its branches are rarely affected with the degeneration of their coats, analogous to that so frequently observed in the branches of the aortic system. Dittrich, however, has clearly shown that (as formerly pointed out by Mr. Paget,) this view is erroneous: that disease of the coats of the smaller subdivisions of the pulmonary artery is by no means uncommon; and that, which is especially to the present purpose, the occurrence of this disease is almost invariably associated with those causes which impede the transit of blood through the lungs, and so lead to permanent distension of the pulmonary artery and its branches, and consequent hypertrophy of the right ventricle. Of these causes, disease of the mitral

valve, emphysema, and wasting of the tissue of the lungs, are, singly or combined, the most frequent. The almost invariable occurrence of diseases of the small pulmonary arteries in such cases, and the absence of the disease when no impediment to the pulmonary circulation exists, led Professor Dittrich to two important conclusions: first, that the circumscribed pulmonary apoplexy, so commonly found in such cases, results from the rupture of the dilated and diseased vessels, just as sanguineous apoplexy usually results from the giving away of diseased cerebral vessels; and, secondly, that the degeneration of the coats of the vessels is the consequence of the previous over-distension to which the artery and its branches have been continually subjected, by the excessive force of the right ventricle, and the impeded transit of the blood through the lungs. Reasoning from what he found in the case of the pulmonary artery, Dittrich suggested that, most probably, the disease occurring so much more frequently in the coats of the general arterial system, is due to an analogous cause, viz. more or less continuous over-distension of the canals of the affected vessels. The frequent association of cardiac mischief, especially hypertrophy of the left ventricle, with general arterial disease, and the occurrence of the disease first, and principally, at those parts most exposed to the force of the moving blood, such as the early part and arch of the aorta, and the angles whence branches of the artery proceed, are among the principal arguments which he adduces in support of this opinion.

Assuming then as probable—and there seems abundant reason for so doing—that disease of the arterial coats, especially when associated with hypertrophied heart, is, as suggested by Dittrich, the result of continual over-distension of the vessels, we can readily understand why the cerebral arteries should present this disease in so marked a degree, for, in addition to the directness of the channel through which they receive their blood from the heart, and their speedy subdivisions, it is well known that they are unsupplied with the strong fibro-cellular sheath possessed by other arteries, and that their coats, are moreover, much thinner than those of arteries in general. For these reasons, therefore, it is natural to suppose that they will be especially liable to feel the force of a hypertrophied left ventricle, to be more or less continually over-distended thereby, and ultimately to have their coats diseased. Thus weakened by both over-distension and disease, the rupture, and the consequent sanguineous apoplexy, are events which, especially under the influence of an hypertrophied heart, would seem to follow, almost as a matter of course.

The circumstances under which cardiac disease will perhaps be most likely to induce over-distension and degeneration of the coats of the small arteries, especially those of the brain, are those in which there is hypertrophy of the left ventricle without valvular disease—as when it results from renal disease—for then the full force of the hypertrophied ventricle will be exercised directly upon the arterial current. The frequent existence of more or less extensive disease of the coats of the aorta, as well as of the smaller arteries, in cases of associated renal dis-

ease and hypertrophied heart, is quite intelligible on this view, which refers the dilatation of the vessel, and the disease of its coats, to the over-distension produced by the enlarged heart. The opinion that disease of the coats precedes the dilatation, and induces both it and the enlargement of the heart, has but few facts in its favor. For it is more difficult to believe that degeneration of arterial tunics is dependent on the same general cause that produced the structural changes in the kidney, than that it results from the constant over-stretching to which the affected vessels have been subjected by a hypertrophied heart following upon the renal disease. Whatever gives rise to such continual over-distension of an artery, whether the undue force of the current of blood propelled by the heart, or obstruction to the distribution of the blood by disease in any large organ, may be supposed capable of producing degeneration in the arterial coats. In this way, perhaps, may be explained the thickened and dilated condition occasionally found in the renal artery in advanced disease of the kidney, for owing to the structural changes in the gland the transmission of blood through it will be impeded, and distension of the artery and its main branches consequently result.

If the views just stated be correct, we seem to have a satisfactory answer to the second question, suggested by the analysis of the fatal cases of apoplexy which form the basis of the present remarks, viz. What share do the renal, cardiac, and arterial diseases severally take in the production of the apoplexy? Sanguineous apoplexy, when associated with advanced renal disease, may, I believe, be found dependent on rupture of one or more of the cerebral vessels, which have been weakened by structural changes in their coats; and it may, I think, be held that these changes in the coats are principally induced by continued over-distension of the vessels, resulting from an hypertrophied state of the left ventricle, so commonly found in such cases; and lastly, that this enlargement of the left side of the heart, when independent, as it often is, of valvular lesion, is the direct result of the renal disease. So that a primary structural lesion of the kidney may, in this manner, through the medium of the heart and cerebral vessels, which are secondarily affected, ultimately result in an attack of sanguineous apoplexy, which but for such renal disease might never have occurred.

As previously remarked, I have omitted from this investigation all mention of fatal cases of mere congestive apoplexy, also all cases of hemiplegia associated with albuminuria, although it is probable that many of these might, like the cases of sanguineous apoplexy associated with renal disease, be primarily referred to the affection of the kidneys. In all cases, therefore, of apoplexy or hemiplegia, it is advisable to test the urine for albumen, for beyond the direct information thus afforded of the probable state of the kidneys, an albuminous condition of this secretion may serve to explain, in the absence of any valvular disease, the hypertrophied heart which so frequently co-exists with the apoplexy.

—*Braithwaites's Retros. From Med. Times & Gaz.*



ART. XI.—*Case of Hemorrhagic Diathesis.* By DR. JOHN R. MILLER.

[To stand by a patient hour after hour, and see his blood slowly but surely draining away, while you have vainly had recourse to every expedient likely to be of any use, is a position of no common difficulty and anxiety. The following is a case of spontaneous hemorrhage, in which the bleeding from the gum was only arrested by the extraction of the tooth in its immediate vicinity.]

The patient, a gentleman of middle age, of a pale, anæmic habit, has been subject, from his earliest years, to occasional violent bleedings, which have been arrested always with great difficulty. In his boyhood, it took the form of epistaxis; in later years that of the hemorrhoidal flux. His life, at one time, was considerably endangered, owing to uncontrollable hemorrhage, resulting from a few leech-bites; at another, from the removal of a tooth: and so alarming was the consequences of this latter operation that he was solemnly cautioned by the medical men in attendance, that on no account must he ever consent to have another extracted.

On the 25th of July last, while residing in the country, after a greater amount of exertion than usual, he commenced, at 11 P. M., to spit blood; and upon examination it was found to proceed from around the neck of the first lower molar on the right side.

The tooth was very loose, owing to absorption of the alveolar process; and the free edge of the gum embracing the tooth, showed an ash-colored line of ulceration, from which the blood was seen to issue. The gums were in a very relaxed condition, but did not present the smallest scorbutic appearance.

At first astringent lotions of myrrh, alum, catechu, were employed; then the part was touched with the tincture of the muriate of iron, and a purgative of compound powder of jalap was administered, followed by small doses of sulphuric acid; after which the acetate of lead and opium pill was had recourse to.

In seven hours from its commencement the bleeding stopped, but broke out again at 1 P. M. (26th.) Similar measures were again employed, but without success; and the bleeding, which was considerable, having now continued for over five hours, the patient was seen by Dr. Brown, of Melrose, who, of course, at once recommended the extraction of the tooth; but, on learning the hemorrhagic constitution of the patient, he agreed with me that this plan could not be thought of.

Having found gallic acid of great service in cases of passive hemorrhage, he thought it might be tried here with advantage. He also touched the part with creosote, and failing good effects from this, recommended the mouth to be washed with tinc. of mur. of iron, largely diluted.

The creosote produced no beneficial results; bleeding continued unchecked for eight hours more, when a temporary cessation occurred (2 A. M.;) but only to be renewed at 1 P. M. of the same day. We now tried ice externally, by means of a bladder, and the nourishment—

which was chiefly strong beef-tea—was given cold. Iron internally was added to the other remedies. But the hemorrhage was in no way influenced for the next fifteen hours, when it suddenly ceased on the 28th, 4 A. M.

Matters were now assuming a very serious aspect. As near as we could calculate—making due allowance for the admixture of saliva and different lotions he was using—the patient had already lost at the rate of about 3j. of blood for every three minutes during which the bleeding had lasted, and that, for the thirty-five hours of actual hemorrhage since the night of the 25th, gave between five and six pounds of blood.

It was not, however, consequent upon the amount of blood lost, that grounds for immediate anxiety existed; for, although he was very weak and exhausted, which the want of sleep and proper nourishment had increased, yet the pulse indicated nothing hemorrhagic, but was of moderate fulness, slow, easily compressible. Could we have assured ourselves of no further hemorrhage, a few days would have sufficed to restore the patient; but, with the experience we had already had, we held no guarantee that the blood might not at any moment burst out afresh; and we could not but feel how impotent the measures hitherto employed had been, and that nothing further we could suggest gave promise of better success in the event of its recurrence.

Under these circumstances, therefore, it was considered desirable to call in further advice.

Dr. Begbie and Mr. Nasmyth, who now saw the case, recommended pressure with dry lint should the bleeding return, and in the meantime to continue the internal use of the iron. At this stage the gums and neighboring parts were a good deal swollen and blackened by the tinct. of iron and creosote; coagula were also adherent; the mouth was opened with difficulty, and a satisfactory examination was scarcely now possible, as much from the risk of again inducing hemorrhage as from the confused state of the parts.

On the evening of the 30th, at 7 P. M., when the sloughs were becoming detached, and the mouth assuming more its natural appearance, blood was again suddenly poured forth. Owing to the second molar being in its place, it could not be clearly made out whether the ulceration, which was visible around the sides and anterior portion of the first molar, extended likewise to the portion of gum lying between. It was probable that it did; at this point, however, pressure was inapplicable. Indeed, consequent upon the extreme mobility of the tooth, and the existence of ulceration—a condition of itself, under ordinary circumstances, unfavorable to the employment of pressure as a means of arresting hemorrhage—it became a matter of extreme difficulty, as well as uncertainty, the application of pressure at all. It was necessary to employ, not only pressure, but counter-pressure, so as to keep the tooth as steady as possible. The fore-finger and thumb applied over a roll of lint, close up round the neck of the tooth, seemed the method best calculated for fulfilling the object in view; but the least movement on the

part of the patient, or unsteadiness of the operator, must at once displace the relative position of the compress and bleeding surface. And so it proved. The lint became frequently soaked with blood, and had to be renewed; but at last, towards morning, the bleeding appeared to be under control, and at 6 A. M. of the 31st it ceased altogether, the lint remaining *in situ*.

Hopes were now entertained that the hemorrhage was at length combated; but these were soon doomed to be disappointed, for at 11 P. M. the same evening it recommenced as profusely as ever; and although fresh compresses were re-adjusted again and again, and the pressure sedulously maintained, it not only produced no effect in checking the flow, but seemed even to increase it. It was, therefore, laid aside, and the former measures resorted to. The bleeding, after having lasted nine hours, ceased, as on previous occasions, spontaneously.

It was now evident that the patient could not sustain, for many days longer, such a continuous drain on his system. It was like a man living on his capital, with no prospects of further supply sufficient to meet his daily expenditure. It resolved itself, therefore, into a question of *time*. How long could the patient live while no blood, at least none of a proper quality, was being formed to replace that being daily lost? The patient must sooner or later die of *anemia*. Other unfavorable symptoms, likewise, were now manifesting themselves. He showed a distaste to all kinds of nourishment; his pulse, though slow, was small, very compressible, and frequently intermitted. He was unable to sleep, and was becoming restless and feverish, for which opiates had been tried, but were found inadmissible.

On considering all the circumstances of the case, it was now proposed by Mr. Nasmyth, that if the bleeding returned, the tooth should be removed. This was in the face of the known tendency of the patient, and especially contrary to the warning he had on a former occasion received against *extraction* in particular. But it was now obvious that neither pressure, styptics, local applications, nor internal remedies, were of the slightest avail. The tooth out of the way, pressure could then be more directly applied to the bleeding points, and with some probability of success. The contraction of the gum, likewise, would of itself do some good. At all events, matters could scarcely well be worse than they were at present. An opportunity soon presented itself for putting it into practice.

On the morning of the 3d of August, the hemorrhage re-appeared as before; the tooth was extracted with the forceps with little difficulty, and the gum lightly compressed. Only the usual amount of bleeding followed, and our astonishment was only equalled by our satisfaction, to find that in a short time it ceased entirely. A recurrence took place after a few hours, but under the use of pressure with the finger, and diluted tincture of matico, the amount was not very considerable.

This was the last of it.



And now, naturally enough, my first feeling was one of unqualified regret that this plan had not been adopted at the outset ; and there may not be wanting some who may be disposed to censure me for indecision and an error in judgment, for having relinquished this course out of preference to the other. But, it may be well to consider, how easy a matter it is for one who has been forced to make a leap in the dark, and suddenly finds himself on the other side sound and well, to ridicule the hesitation and fears of another who knows not the extent and danger of the gulf yawning at his feet. It would, assuredly, have been a proceeding open to the imputation of unpardonable rashness, had I—with the recorded cases of a fatal termination following the extraction of teeth, in not a few instances, where, as in the present one, hemorrhagic constitution prevailed—at once removed this patient's tooth, before having made trial of every other measure which seemed likely to promise relief.

The sequel of the case, I think, shows that the tooth was the exciting cause of the hemorrhage, and had it been allowed to remain in, the patient must at length have sunk from loss of blood. The appearance of the tooth, one fang of which was roughened and darker than the other, indicated an inflammatory action of the socket, and the portion of the fang which was dead, acted like a foreign body, and kept up the irritation. The danger here, therefore, arose from the *presence* of the tooth, a feature which removes this case entirely from comparison with others, where danger has only commenced *subsequent* to extraction ; and were we to lose sight of the antecedents of our patient, we might be led into the error of considering it not one of hemorrhagic diathesis at all, but merely an illustration of great local disturbance of the capillaries of a particular spot.—*Braithwaite's Retros. From Edin. Med. Jour.*

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ART. XII.—*On Traumatic Extravasation of Blood within the Arachnoid.* By PRESCOTT HEWETT, Esq., Professor of Surgery to the Royal College of Surgeons of England.

[THERE are no certain signs by which we may know that blood has been poured into the cavity of this serous membrane ; when slight it may produce no symptoms whatever, and even when in larger quantities there may be no decided symptoms, owing to its being very much diffused ; but supposing you have the symptoms of compression, what are you to do ? Would you be justified in going on a voyage of discovery, and opening the dura mater in search of the effusion ? This is a very serious question, and one on which there is a great diversity of opinions, even among our best surgeons.]

“Are you warranted to trephine, to let out the blood from between the meninges ?” Such is the question asked by Abernethy, a question

which every surgeon of the present day would, I think, answer in the negative. But let us look at the question as it is put by Sir B. Brodie. "Suppose a case, in which a considerable portion of bone has already been removed, in which the dura mater is seen exposed, of a blue color, lifted up by a collection of blood beneath it, and bulging, as it were, into the aperture which has been made in the cranium. Are we justified in puncturing the dura mater, for the purpose of allowing the extravasation to escape?" Under such circumstances as these, no surgeon would, I think, hesitate; but at once lay open the dura mater. This, there is no doubt, is the course of which ought to be pursued, and there is ample evidence to prove that, however perilous such an operation may be, it has repeatedly been attended with the most signal success. Whenever, on the other hand, the dura mater, after the removal of the bone, is found to be quite healthy, every prudent surgeon having nothing to guide him, will abstain from proceeding further.

Some of the cases which I have already brought before your notice, prove that patients may recover, even when large quantities of blood have been poured into the cavity of the arachnoid, and that too, without a single symptom to reveal the extensive mischief which still lies within the skull. This complete recovery is, however, rare; for large extravasations of blood in this serous membrane generally lead to the formation of encysted collections which give rise to some permanent affection of the brain.

For the following interesting case I am indebted to Dr. Richard Quain:

A farmer, aged 58, about three years before his death, in driving home from market, was, being rather the worse for liquor, accidentally turned over in his cart. When picked up, shortly afterwards, he was in a state of insensibility, with a large scalp wound over the right temple. He gradually recovered his senses, so as to be able to answer such questions as were put to him by a surgeon, who arrived about half an hour after the accident. The wound being dressed, the patient proceeded home, a distance of five miles. He was subsequently confined to his bed for a week, after which he began to resume his ordinary avocations; but he was never the man he had been. He complained of a general pain in the head, and more especially at its lower part, as well as at the back of the neck. During the following year, he became more irritable in temper and desponding in spirits. He felt unable to follow his employment as was his wont, and, for hours together, he frequently sat with his hand on the side of his head, and his elbow resting on his knee, sometimes exclaiming that he was "good for nothing, and no use here." His memory became impaired, but in other respects the intellectual faculties were unaltered. Thus matters went on for about a twelve month, when one day, while holding a lamb, which was struggling violently, he was suddenly seized with a kind of fit. He fell forwards, as if drunk, became insensible, and continued so for a quarter of an hour. During this time there were no convulsions; but when he

came to again he felt a numbness on the left side, and the skin appeared dark colored for several days afterwards. In about a month, he had another fit of a like character, and from this period he became subject to such seizures, on any unusual exertion. He was always conscious of the approach of these attacks, and used to say that he was going to have one of his fits. He remained much in the same state until the day of his death which took place suddenly from rupture of the left ventricle of the heart, caused by fatty degeneration of that organ. On opening the dura mater, on the right side, a large cyst fell out of the cavity of the arachnoid. The cyst, which was perfectly loose, was lying lengthways, covering the greater part of the upper surface of the cerebral hemisphere, where there was a large depression, or bed, into which the cyst fitted. There was neither roughness or any signs whatsoever of any connexion ever having existed between the arachnoid and the cyst. The membranes of the brain, and the brain itself, were quite healthy. The cyst, kidney-shaped, but flatter, measured in length seven inches and a half, and in width, one inch and a half in its broadest part. Perfectly smooth throughout its whole surface, the cyst was of a dark fawn-color, with rusty colored patches here and there. Around the margin of the cyst was a thin membrane, forming a broad but perfectly smooth fringe. The cyst itself, when opened, was found to contain an ounce and a half of grumous-looking fluid, of a chocolate color, evidently the remains of extravasated blood. After settling for a few hours, the more solid part of the fluid sank, leaving a blood-tinged serum at the upper part. Under the microscope, the sediment, in which were several small fibrinous clots, was made up of a mass of blood globules, mixed with granular cells, probably the white corpuscles of the blood, and a quantity of broken-down fibrin, with some well-formed crystals of hæmatine. The clots were composed of fibrin, more or less granular, and softened, and entangling blood globules and hæmatine crystals. The walls of the cysts were very firm, tough, and rather thicker than the dura mater generally. The internal surface, of a reddish hue, as if dyed by the the colored contents, was perfectly smooth and polished, except at few points, to which some rusty colored clots were adherent. Microscopically, the structure of the cyst was composed of fibres resembling those of fibrous tissue, but destitute of the cell fibres, which indicate a growing texture. There was no distinct lining membrane, but the internal layer of fibres was rather easily detached from the rest of the structure, giving somewhat the character of a separable membrane. There were no epithelial cells on its surface; but entangled on its substance were blood globules and hæmatine crystals.

The examination of this cyst, made by Dr. Richard Quain and myself, left no doubt on our minds as to the origin of this loose bag in the cavity of the arachnoid. It was a blood cyst, and nothing else.

But other cerebral affections have been known to follow a traumatic effusion of blood within the arachnoid—Insanity, for instance, of which the following case affords a most striking illustration :



A young gentleman, at the age of 8 years, when at Winchester school, was struck by a cricket bat or ball, which caused severe concussion of the brain. This was followed by immediate symptoms of insanity, from which he, however, recovered for a time; but he was, soon afterwards, brought to London, as he was again labouring under an aberration of mind, and then placed under Mr. Fisher's care. From the time of the accident up to that of his death, a period of fifteen years, he had occasional fits of insanity, lasting two, three, four, or five months, with considerable lucid intervals. The last two years and a half of his life were spent in MM. Stilwel's establishment, at Hillingdon. Tall, athletic, and capable of undergoing great bodily fatigue, this patient, to a common observer, appeared merely weak in intellect and loquacious in manner; but he still had occasional fits of insanity. His last illness was characterized by great pain in the head and great drowsiness.

At the after death examination, a large pouch, containing 10 ounces of grumous blood mixed with a clot, and some red blood, was found in the cavity of the arachnoid, to the parietal layer of which it was firmly adherent. This enormous encysted collection of blood covered the whole of the upper surface of the right hemisphere, which was deeper in color, and rather less in size, than the left. The visceral arachnoid, the pia mater, and the brain itself, were all perfectly healthy in structure. The bones of the cranium were much thinner than natural; at no part were they more than a quarter of an inch thick, and in places they consisted merely of the two tables. The right parietal, towards its anterior or inferior angle, presented an evident bulging, where the diploë had been entirely absorbed, by the pressure from within. The right half of the frontal and of the occipital bones, as well as the squamous portion of the right temporal, had been subject to a similar action. The whole brain having been pushed over to the left side, had exerted on the left parietal bone a considerable degree of pressure, causing absorption of the diploë, but without any bulging. The left half of the frontal and of the occipital bones showed no signs of undue pressure. The left portion of the lesser wings of Ingrassias, and the corresponding part of the anterior clinoid process, were reduced to the thickness of a sheet of writing paper, almost to a cutting edge. When measured internally, the calvaria presented, in favor of the right side, an addition of half an inch.

Having, in March, 1846, been asked by Mr. Fisher to examine the dura mater and corresponding pouch above described, about the true nature of which there appeared to have been some doubt, I can fully corroborate the accurate description which was subsequently given of these parts by Mr. Hancock.

In this case we are able, fortunately, to trace the whole history of the disease, which, during life, was considered to be hereditary, the father of this patient having, curiously enough, been insane, from an injury of the head, caused by a fall from a horse, two years before the birth of his son.

Foville, also, in speaking of these encysted collections of blood in the insane, expressly states that, in one of his cases—that of an old soldier—the disease had been caused by a heavy blow on the head. And Blandin describes a similar collection, which he found on an insane person at Bicêtre, the history of which was distinctly traced to a sabre-cut, which the patient an old soldier, had received on the right side of the head, at the battle of Waterloo. Traces of the blow were found both in the instruments and in the bones, to which this encysted collection of blood corresponded.

Here are three cases of insanity in connexion with encysted collections of blood, the extravasations of which we can distinctly trace to injuries. With accurate histories might we not thus bring back to accidents several cases of a similar nature?

Let us now proceed to the consideration of the extravasations of blood in the pia mater. Concerning these, I have but little to say. Extravasations of blood in the pia mater are less common than those within the arachnoid; at least, comparing a large number of these cases together, I find blood much less frequently in the former than in the latter. Almost always connected with more or less extensive laceration of the brain, these extravasations readily spread from the seat of the injury to distant parts. In the arachnoid, an extravasation of blood is seldom met with in the occipital fossæ, even in cases where it is plentiful in the cerebral region. In the pia mater, blood under such circumstances not unfrequently covers the whole cerebellum, and extends along the spinal marrow, and that too, without an injury of these organs. Rapidly infiltrating itself into the meshes of the pia mater, I have never seen the blood forming encysted collections such as those which are found within the arachnoid, neither am I aware that any cases of this kind have ever been observed.

We have no symptoms by which we can recognize an extravasation of blood in the pia mater. It appears, however, that both John Hunter and Sir Benjamin Brodie thought that these wide-spread extravasations are apt to produce more urgent symptoms than those collections of blood in one mass, which give rise to a less general pressure; but further experience has not confirmed this opinion.

Neither have we here the advantage which, now and then, may be met with in the effusions of blood within the arachnoid; for the constant infiltration of the blood in the pia mater precludes all idea of its being let out, even if the dura mater were laid open. All we can do, in such cases, is to treat them generally according to the symptoms which may exist.

Lastly, we must now pass on to the extravasations of blood into the brain. In speaking of these extravasations, I wish, for the present, to confine myself to the collections of blood which may, in consequence of any injury, be poured out either into the structure of the brain, or into its ventricles. The smaller or minute extravasations will find their appropriate place in contusions or laceration of the cerebral substance.

Injuries of the head seldom give rise to large extravasations of blood in the structure of the brain. Cases, it is true, occur now and then in which large collections of blood are met with in the brain after an accident,---but it is the effusion in such cases always dependent upon the injury? I think not.

In dealing with the cases in which collections of blood are found in the substance of the brain after an accident, great caution is necessary, in order to avoid, if possible, mixing up cases of apoplexy with those of traumatic effusions. The surgeon must ever bear in mind that an accident coëxisting with an extravasation of blood in the brain does not necessarily imply cause and effect. The previous condition of the patient's brain, or the outpouring of blood, may, in fact, have been the cause instead of the consequence of the accident. With a clear history of the accident, and especially of the previous state of the patient, there will, however, in the generality of cases, be little or no difficulty in deciding upon the nature of the case.

A man, aged 50, was admitted into St. George's Hospital, in 1849, with a small scalp wound at the upper part of the forehead, and slight ecchymosis of both eyelids. He had fallen from a pair of steps, but could give no account as to how the accident had happened. He was quite sensible, however, and stated that, for several days past, he had been confused in his head. With the exception of a slight wandering occasionally, this patient appeared to be going on well, when he was suddenly seized with well-marked symptoms of apoplexy, and died four hours after the attack. On dissection, a large quantity of blood was found extravasated in the meshes of the pia mater, forming a species of cap, covering the whole of the brain. All the ventricles of the brain were filled with clots of blood which had proceeded from the right corpus striatum, the structure of which was softened and extensively broken up. The bones of the skull presented no traces of injury.

In such a case as this, the true nature of the affection was obvious; but, supposing the extravasation to have taken place at the time of the accident---and what was more likely?---would not this case have been looked upon as one of traumatic effusion? In this instance, there was an interval between the accident and the attack of apoplexy; but, in many cases, we find ourselves deprived of any such guidance.

A middle-aged man having fallen from a ladder about the distance of 18 feet, was admitted into St. George's Hospital in 1839, in a state of perfect unconsciousness, and bleeding from the nose. The left side of the face was paralysed, but strongly-marked convulsions existed in all the limbs. The breathing was stertorous, the pupils irregular and sluggish, and the pulse very quick and sharp. He was a stout, strongly built man, with a large head, and short, thick neck. From the account given by his fellow-laborers, it appeared that he had fallen off the ladder without slipping, that no part of the ladder had given away, and that the steps were very broad, so that a person could stand on them without any danger. There were no appearances of external injury about



the head. Shortly after being bled, this patient began to show some signs of returning consciousness ; but, towards the evening, he became restless and violent. The left side of the head now presented an extensive bruise which effectually closed the eyelids. His wife, who came to see him in the evening, stated that he had never been subject to epileptic fits ; but that, two years previously, he had suffered from determination of blood to the head. Having been actively treated, this man so far recovered as to be able to answer questions, and appeared to be going on well, when, on the third day after his admission into the hospital, and without any apparent cause, he was found lying in a perfectly comatose state, from which he never rallied. On examining the body, the coverings of the skull and its bones presented a natural appearance. No traces of injury were detected about the membranes, or any part of the surface of the brain ; but two large extravasations of blood were found in the deeper parts. One, on the right side, was connected with the corpus striatum, and the other, on the left side, occupied both the corpus striatum and the thalamus nervi optici. The last extravasation appeared to have taken place more recently than the other one.

Doubtless this case was one of apoplexy, which itself was the cause of the accident, and yet it might be taken as a type of many a so-called traumatic effusion into the brain. I might bring before your notice several other cases of a similar nature, notes of which I have by me ; but they would, one and all, only tend to prove how necessary it is for the surgeon ever to be on his guard, where there exists the least doubt as to the nature of the case.

Collections of blood in the brain, or in its ventricles, the result of an accident, may run through the numerous and well-known changes of a simple apoplectic effusion ; changes which, in some instances, precisely resemble those already noticed in extravasation into the arachnoid.—Such changes seldom, however, take place in traumatic extravasations, which are generally rapidly fatal, being, as they are, for the most part, associated with other severe lesions of the cerebral substance.—*Braithwaite's Retros.*—*Med. Times and Gaz.*

## REVIEWS.

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REV. I.—*Human Physiology, Statical and Dynamical ; or, the Conditions and Course of the Life of Man.* By JOHN WILLIAM DRAPER, M. D., LL. D., Professor of Chemistry and Physiology in the University of New York. Illustrated by nearly 300 fine Wood-cuts from Photographs. Pp. 650. 8vo. New York : Harper & Brothers, 1856.

THIS is an interesting book by an eminent Zoöchemist. There is no necessity for dwelling upon either its fundamental principles or its minute details of an elementary character. It is written in a perspicuous and elegant style. Its doctrines enunciated in a clear and forcible manner, often suggest more than is actually expressed. Its logic is, for the most part, conclusive, and, regarding the work as a whole, it will doubtlessly be received as it should be, with alacrity by the medical profession. The intrinsic merits of this work cannot be impaired by the dissenting criticisms of this article in regard to certain aspects which it presents, even should these criticisms be well founded. A perfect book would be a monstrosity,—a perfect critic a monster. The sequel must speak for itself. The following arguments adverse to some of the postulates of this book, be they logical or sophistical do not proceed from a desire to derogate from the high claims of Dr. Draper as a man of science who has deserved well of his country. Instead of seeking to depreciate his “*Human Physiology*” through this Journal, its readers are earnestly recommended to avail themselves of its early perusal, from which, it is predicted, they will derive instruction and satisfaction. Dulness and Draper are antitheses.

This book is extremely attractive in its typography. Great is the æsthetical philosophy of printing, from primers to physiologies, combining the beautiful with the useful. A magnificent typography charms the eye, while it makes a more indelible impression on the memory. Many of the illustrations whether examined by the naked eye or a magnifying lens, appear marvellously delicate, well defined and symmetrical, reflecting credit upon the author, artist and publishers. It appears that the author is an artist as well as a philosopher, having made some discoveries or improvements in photography. He says, “many of the original engra-

gravings have been obtained by the aid of microscopic photography, the process having been so far improved by the author as to be rendered very available for these uses."

The photographed engravings which Dr. Draper has added, are very numerous and beautiful beyond description; the residue, not original, "have nearly all been obtained through the intervention of photographs."

Some of these are good, bad, and indifferent. The typical Guinea Negro, Fig. 279, for example, cannot be accepted as the type of the negroes imported directly from the Coast of Guinea to the shores of Louisiana, numbers of whom still live in the country under the weight of a century of years, more or less. Their maxillary bones are neither so protuberant nor their fascial angles so much depressed towards the horizon, nor are they altogether so apish, as the aforesaid typical representation indicates.

Some of the figures are too much reduced to be satisfactory, the numeral references being scarcely intelligible without microscopic aid, as for instance, Figs. 157, 176, 181, 182, and others.

These engravings so highly illustrative of microscopic anatomy, are so economically intercalated and packed into the text as to occupy but little space, while they are much easier for reference than a separate atlas, being a very convenient arrangement especially adapted to microscopic objects.

Is the topics upon which it is proposed to make some desultory remarks are precluded in the preface and reproduced in the body of the work, and having important bearings upon the physical, mental, vital, and physiological history of humanity, it may be well to hear both sides, the Draperian and the anti-Draperian.

While Dr. Draper denounces vitalism as little short of criminality, he avows his steadfast belief in the perfectibility of man which is not new but utopian. "The vital principle," he says, "is a preposterous doctrine which will not bear the touch of exact science for a moment—a relic of the old metaphysical system—an imaginary principle—an imposture." "We may rest assured that we have the capacity of comprehending all the conditions of our life. God has formed our understandings to grasp all these things. My faith in the power of the intellect of man is profound. Far from supposing that there are many things in the structure and functions of the body which we can never comprehend, I believe there is nothing in it that we shall not at last explain. Then, and not till then, will man be a perfect monument of the wisdom and power of



his Maker, a created being knowing his own existence, and capable of explaining it. In the application of exact science to physiology, I look for the rise of that great and noble practice of medicine which in a future age, will rival in precision the mechanical engineering of my times." 25.

This "profound conviction and assurance that man has the capacity of comprehending and explaining *all the conditions of his life leaving nothing* in it which he shall not at last explain," is singularly in contrast with the profound convictions of the greatest men that have ever lived, being withal the antithesis to the reality. It is sciolist rather than the true philosopher who is apt to make such pretensions—not that Prof. Draper is a sciolist, and for that reason his postulates deserve scrutiny.

What said Newton\* who had sounded the depths of philosophy, and the capacities of the human understanding? "I have picked up," said he, "a few shells by the sea-shore, but the great ocean of truth, lay undiscovered before me." He had been so often baffled and driven back in his attempts to explore, that, far from having had "a profound conviction and assurance of *his* capacity of comprehending and explaining all" he came very near despairing all. He says:

"I have long since determined to concern myself no further about the promotion of philosophy. (Dec. 5, 1674.) I will resolutely bid it adieu eternally." (Nov. 18, 1676, *Correspond. Scien. Men.* ii 368. 405.)

LaPlace, the Newton of France, declared with his last breath, "that what we know is little—what remains unknown is immense." Such men *are not* "far from supposing that there are many things which they can never comprehend." The profound thinker finds out at last that he knows but little, so little that he is overwhelmed, humiliated, bowed down to the dust. That which he had once taken for granted as certain having been so often disproved by subsequent research, that scepticism is more likely to mislead him than self-sufficiency and infallibility; this is eminently true in pathology, therapeutics, and physiology, which for the most part, are progressive rather than positive sciences.

"Capacity of comprehending all!—Grasping all things! capability of explaining all the conditions of man's life! rivalling in precision the the mechanical engineering of my times!" Such are the claims of pure physics or chemistry over "the machine" as Dr. Draper delights to call the body! Such the dreams of human perfectibility! the exhaus-

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\* M. Comte, author of *Philosophie Positive* (5 vols.) a man of extraordinary attainments as the historian of the sciences, says, (parodying the scriptures) that the only "glory which the heavens declare," is the glory of Newton! (Lond. Quart. Rev. '49.)

tive analysis of all knowledge, which over-top Lamarck's theory of development from the lower to the higher forms of organic life, together with the theory of the indefinite prolongation of life even to immortality upon this earth, not to name Paracelsus' elixir of life.

What are these so-called explanations of "positive science," (a favorite phrase) which prove "the vital principle to be an imposture?" Even in physics wherein stability and uniformity reigns, affording a strong contrast to the variations, multiformity, intermittency and periodicity of animal life, the physicist does not attempt to give an explanation, strictly speaking, much less one that "grasps all things," and "all conditions." He merely announces the antecedents, order, succession, and uniformity of phenomena—that one thing always goes before or follows another. All these might be, for ought he can tell, reversed.<sup>1</sup>

Now this is no explanation at all. In most cases he is unable to discover any connection between any two events, much less can he know that the one is necessarily adapted to produce the other directly without one or many unperceived intervening agents. He may know, indeed from mere experience, that one thing follows another. He may call this law an explanation and affirm that these are directly and essentially connected as cause and effect. Nevertheless he could not safely affirm that "all the conditions" of these phenomena are grasped. In many cases, it turns out that these events are found to be not directly connected, other essential phenomena intervening in their causation.

One thing it is possible to know, which is, that nothing in physiology, is yet known in the sense in which Dr. Draper expresses himself, namely, "the comprehending and the explaining *all the conditions* of man's existence so as to leave *nothing unexplained*." There is not in the "Human Physiology, Statical and Dynamical," one action concerning which one is absolutely certain that all its possible or actual conditions, qualities, modes, and relations, are perfectly explained and known. This would require not only a complete analysis but a complete synthesis without which it would not be conclusive. Excepting the Infinite Intelligence, it is not certain that there is in the hierarchy of created intelligences a possible synthetic knowledge so complete as is implied by "all the conditions" of man, or insect. It is probable that an absolute relation exists between any one part, and the whole universe, so that in order to comprehend *all the conditions of man*, it would be necessary for "positive science" to comprehend the infinite and finite at one grasp !

As Dr. Draper rejects without hesitancy everything in physiology which is not demonstrable by physics, thereby confounding these two sciences hitherto deemed distinct in popular estimation as well as in the estimation of the great majority of physiologists and physcists, it may be proper to examine whether he has followed his own rule in philosophizing. "This machine," as he calls the human body, "has an immortal principle in it—the soul." This discovery he claims in the name of "Physical Science from which physiology cannot hereafter be disconnected." This positive or physical science demonstrative of an "immortal principle in the machine" has, hitherto escaped the observations and experiments of all chemists. The proof of immortality has been generally attributed wholly to a higher source than a chemical laboratory. If the machine has an immortal principle, why not a vital principle?—a dead or non-vital immortal principle is a contradiction, and yet Dr. Draper says—"it is the duty of the rising generation of physicians to *exorcise the vital force*!" Perform this duty—cast out this devil, the vital principle, and nothing lives but death! neither soul nor body. Neither in the realms of spirit, nor in the realms of matter can there be life, without a vital principle. In answering in Dr. Draper, it is not necessary to fall back upon the fundamental idea which underlies all religious belief concerning a future state and the immortality of the soul as beign founded on a vital principle, it is sufficient to say that it is equally fundamental in physiology constituting, if not antitheses to, at least differentiations from, pure physics in many essential points of view. This "high argument" enters into every conception and every expression concerning "a living soul" and a living body. It is not possible to define it, but it is self-evident in its phenomenal differentiations. "The machine" of Adam by by the way was vitalized by breathing into it a living principle. The carbon, nitrogen, hydrogen, oxygen and the other organic elements including "combustibles," were insufficient for his physiological life and its finalities without this vital principle.

If the physiological chemist could by a synthesis combine the organic elements so as to create man with a living soul and body, it would not follow that his understanding would "grasp all the conditions of his existence so as to leave nothing unexplained." He could only view things as they appeared to his finite and limited intellectual vision—a higher intellect and more expansive intuition might grasp other and higher conditions ever upward and onward, yet ever falling short of the Infinite Intuition. Suppose that the whole of physiology was at once



unveiled, without a re-construction, expansion or corresponding development of the understanding, it would not follow that either the suckling in the cradle or the veteran philosopher on the verge of the tomb, could "grasp all its conditions," and, having nothing further to learn in this behalf, would like Alexander weep because there were no more worlds to be conquered. Neither the understanding itself nor the objects which exist independent of it, can in our mode of cognizing them be analyzed in an absolute and exhaustive manner, so that we can be sure nothing remains unknown as to modality, attributes, essence, and "conditions."

It is proper to experiment, to reason, and to conjecture; yet as it regards the completeness of physiological explanation, probability is for the most part all that is attainable. Schiller says—"He who never ventures beyond the actual, will never make a prize of truth."

Thus Dr. Draper's theory which claims the whole realm of physiology as being purely physical, does not invalidate the merits of his work because much of physiology is best illustrated by, and is harmoniously blended or identified with physics, and where identity and homology fail, analogy is often the best guide for the inquirer. If Dr. Draper does not explain all physiology physically he explains much and well. Whenever vitalism towers above, yet not antagonistic to chemistry he finds a satisfaction in claiming it for the latter to which it must succumb, if it has not already succumbed to nitrogen, hydrogen, or some chemical combination. If however, every phenomenon called vital should be indissolubly linked with a well defined chemical alteration, it would not invalidate the doctrine of vitality; for such chemical change might be the effect or the coincident, or the condition of vitalism proper, yet not vitalism itself, as will be noticed hereafter.

While Dr. Draper denounces vitalism, he is as will appear in the sequel, virtually an ultra vitalist, taking for granted more than the usual number of vital principles not proved to be founded upon "material substrata." He has "magazines of force" which must be vital; at least they are not demonstrable as physical. He admits that these are no anatomical differentiations discoverable in the sensori-volitional and excitomotony nerves, whereupon he turns carpenter, and from these undiscovered timbers makes many structures, particularly arches, as "automatic arcs, cellated arcs, multiple arcs, registering arcs, influential arcs," &c., all of which are elaborately figured, and minutely referred to in anatomy their vital functions being assumed.

The prevalent complex anatomical and physiological system of nervous and vital functions, Dr. Draper pronounces "a solid foundation, the evidence being complete for an exact knowledge," as discovered by Bell and others; and yet these same discoverers whose theories he adopts, were vitalists; the nervous actions which they are supposed to have discovered are so many antitheses to Dr. Draper's avowed physical expositions. He says that "the conductivity of the nerve fibres is as purely physical as that of a metal wire." 267.

Dr. Draper labors upon the four imaginary sets of nerves *con amore*. The style of this system being that of physics, the only part of it having any pretension in that direction, is not only adopted but enlarged, so as to include a great many hypothetical ones never before heard of, with diagrams of the same. Having assumed the anatomical mechanism there could be no physical reason why the functions should not be given in the same satisfactory and scientific manner. He has, therefore, given numerous figures, minutely characterized with letters, a, b, c, &c., showing how impressions enter, where they go, what becomes of them, where they intercept each other, how they impinge, fuse, register their acts, if not their names and fatherland. He says there is a common centre for the registry of impressions. 281. "There can be no doubt," says he, "that the registry of impressions involves an actual structural change in the ganglion, which is of a permanent character." 268. "There are nerves the functions of which are essentially different." 267.

"The physical condition upon which the activity of the nervous mechanism depends is the supply of the arterial blood. Nerve centres cannot act except by oxidation. This action is the due supply of arterialized blood. If this be stopped but for a moment, the nerve mechanism loses its power, or if diminished, the display of its characteristic phenomena correspondingly declines. If, on the contrary, the supply be unduly great, or its oxidizing power artificially increased, there is a more energetic action;" (267, 271) whence arises the question, whether "the life thereof is not in the blood?" The nerve being "a purely physical conductor like a metallic wire" and being withal "oxidated," requires "a vital principle" to effect sensation and voluntary motion. If the nerve has not got "this principle" it ought to have it. To call it physical is a misnomer altogether.

If the chemist will persist in calling sensation, emotion, voluntary action, &c., chemical combinations or physical bodies, he misapplies language, as well as facts, seeing that others call these vital, and the

more, because he cannot compound, decompose, or exhibit any of these in the concrete form.

The utter impossibility of producing by synthesis anything vital or even anything having the same organic combinations as a dead animal, is proof enough that the Zoöchemist stands infinitely below the Creator.

It is convenient to call certain sensational, voluntary, and intermitting actions of the living body, vital, which are really as much positive science as anything in chemistry, being known however, only to a limited extent by their phenomenal history. Accordingly, the great majority of physiologists, in nowise imposters, are vitalists, who neither wish to deceive nor be deceived.

As soon as all comprehending, all-explaining physiology chooses to create men and women according to the formulæ of chemistry, then its claims will be accredited. Let it combine oxygen, nitrogen, carbon and the like into not only the form of "the human face divine," but into knowing, willing, feeling, and voluntary beings, and it will have merged physiology into physics, and vitalism into mechanics. Old issues will be exhausted and obsolete and the vital principle be annihilated. The reign of physics will be undisputed, supreme, and everlasting.

The Zoöchemists within the last decennium have however done so much for science that, allowing half of their so-called explanations in ætiology, pathology, therapeutics, and physiology to be erroneous, credit enough is still due them for their facts to place them among the benefactors of mankind; but it is well for their theories that Molière is no more. Their explanations of life require explanation as much as ever.

There is no reason in the world that vitalists and physicists should quarrel. There is not only a parallelism, but identity in their philosophies, which extend over a large area of research common to both. One transcends, without contradicting the other. There is no fundamental antithesis involved. Where the inorganic chemist thinks he is obliged to halt, the vital chemist seeing that it is impossible from inorganic matter to produce living organic beings, without the direct or auxiliary force of the vital principle, advances in his investigations beyond the bailiwick of the physicist. There is no reason in the world to "*exorcise vitalism.*"

Conceding to Dr. Draper "every virtue under Heaven," orthodoxy inclusive—acquitting him of the materialism which some of his statements imply, still his arguments have throughout a tendency to that form of philosophy, which indeed he often virtually avows, although



the following passage is somewhat equivocal in this behalf. In a passage "on the evidence of the existence of a soul derived from cerebral structure," he says, "It is to be regretted that those who should have known better have conceded the argument that from no consideration based upon anatomical or structural arrangement could proof be obtained of the existence of an immaterial principle. Even by such, the study of physiology has been designated as leading to materialism, and, with an injustice which cannot be too emphatically reprobated, the scandal has often been quoted, that where there are three physicians there are two atheists." 283.

Dr. Draper maintains still farther that it is now time for physiology to open its mouth. He says—"If from the construction of the human brain we may demonstrate the existence of a soul, is not that a gain? Why should we cast aside the solid facts presented to us by material objects? In his communications throughout the universe with us, God ever materializes—I am persuaded that the only possible route to truth in mental philosophy is through the study of the nervous mechanism. What is not founded on a material substratum is necessarily a castle in the air." "And since we have established the existence of the intellectual principle as *external to the body*, we might proceed, for now we are entitled to do so, to reason respecting its nature from the phenomena it displays. I do not, however, propose to enter on their consideration now, &c." 286.

"*Evidence of the existence of the soul derived from cerebral structures:* It is greatly to be regretted that evidence drawn from structural arrangement has, hitherto, by very high authority, either been totally cast aside or held in very low esteem.—What if it should turn out that, from the study of the cerebral mechanism, distinct proof can be obtained on this point—proof of just as cogent a nature in support of the doctrine of the existence of the soul as that which we have of the existence of the external world, and of precisely the same character?" 283.

Dr. Draper proceeds upon a ramble through the nervous system to prove this weighty postulate begging the question throughout eight pages in one chapter not to mention other parts of his work, enveloping the problem in increasing darkness at every step. His topics and explanations so far from according with the rigid requirements of positive physics are irrelevant and gratuitous as demonstrations of the existence and immortality of the soul. To examine these in detail would occupy too much space, and could lead to no other result than that of their

inconclusiveness from first to last. He even assumes his anatomy and puts mathematical formulæ or problems to help him to conclusions: "Given the structure of the cerebrum, to determine the nature of the agent that sets it in motion, &c."—He discourses about the different kinds of nerves which he himself says in his account of their assumed double functions, have no anatomical reality: "This double duty therefore implies that there are *two* classes of tubes, the centripetal and centrifugal, *though thus far no structural difference between them has been detected.*" 265.

Dr. Draper, who detests metaphysics, is often very metaphysical in his expositions, which being sometimes unwarranted by logic, cannot be accepted except by those who view metaphysics as visionary or hypothetical. As a physicist, he does not adhere very bigotically to physicalism. He has "magazines in which there are nervous forces"—"permanent registries of impressions involving actual structural change of a permanent character"—"all kinds of photographic drawing are examples," "particular regions of the brain are devoted to special functions, by an inspection of the exterior of the cranium, mental peculiarities may be detected." Magazines, registries, drawings, &c., are physical or mechanical things and can be sworn to, if they exist as affirmed by the author.

He does hesitate to use the language of physics in explaining the immortality of the soul through these *undetected* nerves. He endeavors to defend his doctrine from the charge of materialism,—"*And thus,*" says he, "*it may be proved that those actions which we term intellectual do not spring from mere matter alone, nor are their functions of mere material combinations.*" But listen to Dr. Draper against Dr. Draper: he says, (page 260) "*Philosophers have given us imposing doctrines of the nature and attributes of the mind, in absolute ignorance its material substratum.*—What is not founded on a *material substratum* is necessarily a *castle in the air.*"

"As with the phenomena of development and all natural facts, so with the operations of the mind. There is no such thing as a spontaneous or self-originating thought." 270. This a very startling proposition, which, though apparently true in the material world is not proved to be certain and universal in the realm of mind. Indeed subjective experience or consciousness, is not altogether favorable to this doctrine notwithstanding its conformability to celestial and terrestrial mechanics. Were the soul proven to be material, and vitalism an illusion, sponta-

neity of thought and action would probably be impossible, yet even then the consciousness of a capacity to act spontaneously, voluntarily and without constraint would prove more powerful than mere analogy.

Dr. Draper in denying absolutely the possibility of spontaneous action, does not give "the high argument" by which this assumption is sustained. However, upon adopting the physical theory as applying to the mental as well as to the material world, it will follow, (in the moral world) that Cain when he killed Abel acted from irresistible necessity. If in a given case, physically considered, the antecedents exist, the *effects must* follow, that is, if the motive, will, power, means, and fixed purpose to murder exist, the effect, or murder must take place, unless the party can spontaneously think, will, and act contrarywise, namely, change the antecedents. The physical sciences are founded upon the axiom that the same antecedents or causes must invariably produce the same but never directly opposite effects indifferently. If the mind is ruled by the laws of physics, Dr. Draper's proposition is unquestionable; if not, not. To say nothing of the moral consequences of this doctrine, subjective physiology, consciousness, intuition and self evidence of spontaneous or voluntary action, must prevail against the assumed analogy or rather identity of mind and matter. Physically, Dr. Draper's postulate is true though not new. From the dawn of philosophy to the present hour the problem of philosophical necessity has never received a satisfactory solution. Although a New England book by Jonathan Edwards, on the Will, maintains by an almost overpowering logic that human action being governed by motives, the strongest motive *must always prevail to the exclusion of spontaneous or free will*, yet practically speaking, mankind, even oriental fatalists, have always reasoned and acted in opposition to this "*machine*" theory, as if guided by a common consciousness or instinctive conviction. It may, however, be conjectured that, if any "*machine*" of the solar system, say the Earth, were endowed with consciousness, sensation and will, yet ignorant of the laws of gravitation and celestial mechanics, she would think her diurnal and annual revolutions were altogether voluntary. Thus mother Earth, unable to "grasp all the conditions" of her "existence so as to leave nothing unexplained" would be deceived, and like Eve and some of her daughters, have cause to complain thereupon. The same illusion will apply to machines, both statical and dynamical, whether clocks or steamboats—winds or waves, great guns or flying shot, &c. If nature coquets and deceives, the case is hopeless.



"The nature of the soul—its material substratum—its externality to the body," and its *modus operandi*, have not received either a physical or a metaphysical solution in the "Human Physiology."

Philosophers who have attempted to explain the soul physically or otherwise have not been very successful. "One of the first among the modern philosophers of Germany, Schelling, says of the soul, that the supposition of its existence is superfluous, and that it is a pure fiction;"—"Hegel, that the essence of mind or spirit in general consists in the negation of the opposite." The author himself affirms that, "with respect to created spirits, their essence, contrarywise, consists principally in an eternal affirmation." (Schlegel. *Philos. of Life*. 100-2.)

The concluding paragraphs of the chapter (XIV) on the Nervous System, are mingled with potentialities, contingencies, and doubt. "It may be—perhaps—probably—seems—doubtful—hypothetical," are expressions which indicate that the mechanism and actions of the nervous system do not constitute good physical "ares." In mechanics no portion of an arch is stronger than its weakest part. A missing brick or a crumbling stone is sufficient to cause the whole arch to tumble down into a confused heap.

Indeed, the author seems to stand on ground as uncertain as the sliding banks of the Mississippi.

He says: "In the hypothetical language of physiology, the nervous centres are spoken of as the origin of the nervous influence or force. A close examination of the phenomena they display, leads us, however, to receive such an impression with a certain amount of limitation. Most of the ganglia produce no motor impulses except under the action of external impression, and under the elementary view we have just presented regarding the function of the brain, the same remark applies even to it, since the immaterial principle, whose instrument it is, must be regarded as an agent distinct from it, and in that respect external. Indeed the cases in which the nervous centres seem to display the quality of spontaneously originating force are so few, and in their nature so doubtful, that we are almost entitled to disregard them. For example, the ganglia of the heart are by some supposed to cause, by their own inherent power, the contractions of that organ, which in cold-blooded animals, long after it has been excised, will continue its rhythmic motions. But it is far more agreeable to the analogies of the nervous system to regard these cardiac ganglia, not as organators of power, but as merely depositories, reservoirs, or magazines of it."

Concession respecting the spontaneous function of ganglia.

"The principle external to the body," that is, the soul, Dr. Draper alludes to in the following manner, his own *status* being in regard to the same, problematical :

"It is said that the spirit of man is created in the image of God, an observation strikingly illustrated by the fact that, as regards both, two essentially different doctrines have been held—the pantheistic, by some of the most highly advanced of the Asiatics, and the anthropomorphic, by the Europeans. The pantheistic supposes the human soul to be a part of the Deity, and therefore devoid of form ; the anthropomorphic as having the likeness of the body. The Asiatics, then, regarding the Deity as a principle diffused in and throughout nature, consider the spirit of man as a part or portion thereof, and often use such illustrative allusions as those of a drop of water in the ocean, a spark of a universal and vital flame ; or, if they do not accept this view of a oneness in the nature of the spirit and Deity, they regard the former as arising in some manner from the latter, just as waves may exist upon the sea, or sounds may arise in the air. They believe that at death there is, as it were, a reünion of the part with the whole, as every drop of water sooner or later finds its way back to the sea, or waves become quiet and disappear, or sounds die away in the air.

"But with European nations there has been, from their very infancy, a tendency to the anthropomorphic conception. The barbarians before the Roman empire, in the legendary fables, accepted the idea of disembodied spirits under the shape of men, and through the intervening ages up to our own times, such notions, under various forms, have been held. The rural populations entertain an undoubted faith in fairies and ghosts so that it might be asserted that this manner of viewing the thing is almost natural to us. We instinctively represent to ourselves in this way the immaterial principle, and in the case of each individual expect a correspondence between it and his bodily form. Whatever may be our authority for arriving at such a conclusion, there can be no doubt that it so specializes and intensifies our ideas, and is so connected with many of our most highly cherished recollections, that, even were the evidence in its behalf far weaker than it actually is, we should look without favor on any attempt to invalidate the doctrine, and, if forced to do so, should abandon it with regret. The pantheistic is a grand but cold philosophical idea ; the anthropomorphic embodies our recollections, and restores to us our dead. The one is a dream of the intellect, the other is the hope of the heart."

"Pantheism," says M. Victor Cousin, "is the ascribing of Divinity to the All, the grand Whole considered as God, as the universe-God. It is in its essence a kind of genuine Atheism." But this "dream of the intellect" as Pantheism is designated is more concisely expressed by Pope :—

"All are but parts of one stupendous whole,  
Whose body Nature is, and God the soul."

Pantheism, as now prevalent is rather a German than an Asian development in idealism. "The hope of the heart" as anthropomorphism is termed, is not an occidental or Western idea. Among the Hebrews and early Christians of the East, the idea that the soul resembled the form, features, or personality of the body, though without "the material substratum prevailed," "for a spirit hath not flesh and bones."

Homer (illustrious Pagan !) is equally clear in his exposition, which could not have had an European origin. He not only declares that the soul exists independently, but assumes the form of the body. The soul of Patroclus who had lately fallen in battle appeared, demanding the rites of burial for the body.

" 'Tis true, 'tis certain ; man, 'though dead, retains  
Part of himself ; the immortal mind remains ;  
The form subsists without the body's aid,  
Aërial semblance, and an empty shade !  
This night, my friend, so late in battle lost,  
Stood by side, a plaintive, pensive ghost,  
E'en now familiar, as in life, he came,  
Alas ! how different ! yet how like the same."

EDITOR.

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REV. II.—*New Remedies with Formulae for their Preparation and Administration* : By ROBLEY DUNGLISON, M. D., Professor of the Institutes of Medicine, etc., in the Jefferson Medical College of Philadelphia. Pp. 769. Large 8vo. Seventh edition with numerous additions. Philadelphia : Blanchard & Lea, 1856.

Among learned and eminent authors few can compare with Professor Dunglison as to the variety, magnitude, and utility of his systematic treatises upon the medical sciences, as Lexicography, Physiology, Practical Medicine, Hygiene, Therapeutics and Materia Medica, New Remedies, &c. Some of these works have reached 12 and several 7 editions. Among the latter is the "New Remedies,"—a work which having been heretofore sanctioned by the profession, must prove the more acceptable and useful now that "the author has endeavored to add everything of moment that has appeared since the publication of the last edition."

The "New Remedies" is a large octavo which opens with a kind of analytic index or tableau forming 20 pages of densely printed matter in double columns, indicating diseases and their remedies, as distributed



alphabetically throughout the work. This list of diseases, together with a copious index, makes the work available for easy reference in practice. For example, the practitioner desiring to refer to the remedies for rheumatism, looks for the word, after which follow the numerous remedies (not always new) as distributed on different pages, and among, perhaps, other maladies for which the same remedies may be more or less beneficial. A mere glance in this manner is often suggestive. The writer of these lines, about the same time of receiving this book, opened it at page 480, where, upon seeing iodine recommended as a local application in articular rheumatism, and being then attending a gentleman thus affected, directed the part to be painted with the tincture, which after a few applications produced a severe inflammation of the skin, but the disease of the joint which had been refractory under other measures both general and local, soon subsided almost entirely.—EDITOR.

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### TO THE FRIENDS OF MEDICAL SCIENCE.

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The code of Medical Ethics, says that "every individual, on entering the profession, incurs an obligation to exert his best abilities to maintain its dignity and honor, to exalt its standing, and to extend the bounds of its usefulness." He, who contributes the results of his medical observations and experience in a scientific manner, contributes to the dignity and usefulness of the profession, and to the well-being of society, while he, who seeks to defend his indifferentism in this behalf, by the allegation that *it does not pay*, mistakes the fundamental principles which govern, or should govern the profession. Although the pursuit of material wealth is not incompatible with, when subordinated to duty, yet it is far from being the highest good attainable. An ardent love of science gives rise to ambition at once more elevated and useful.

The celebrated Dr. Reid, one of the greatest thinkers of modern times justly says: "it is no mere judgment or intellectual ability that enables a man to excel in any art or science. He must have a love and an admiration of it bordering upon enthusiasm, or a passionate desire for fame, or of some other advantage to be got by that excellence. Without this, he would not undergo the labor and fatigue of his faculties which it requires. So that, I think, we may with justice allow no small merit to the passions, even in discoveries and improvements of the arts and sciences. If the passions for fame and distinction were extinguished it would be difficult to find men ready to undertake the cares and toils of government, and few perhaps would make the exertions necessary to raise themselves above the ignoble vulgar. The passion for military glory raises the brave commander in the day of battle, far above himself, making his countenance to shine and his eyes to sparkle."

If mere pay becomes the sole motive of human action, the statesman, the soldier, the scholar, and the discoverer will have but little encouragement; science must retrograde, and barbarism return to the world.

The love of science for its own sake, for the intellectual satisfaction it affords, or as a means of promoting the welfare of society, is no small compensation, while its diligent cultivation and diffusion merits and generally receives commendation and even material advantage. An interesting lecture, essay, or paper published in a Journal is read by thousands and may be read by future generations with advantage.

The friends of Medical Science are earnestly invited to extend the usefulness of this Journal by contributing to its pages, the results of their observation, experience, and reflections.

Is there no moral obligation which binds all to add something, be it more or less, to the common treasury of knowledge? Having received much from predecessors and cotemporaries, is it meritorious or even excusable to give nothing in return? Had the past thus "hid its light under a bushel," the present would be groping its way "in thick darkness." All great territorial districts require scientific centres. Originally these were in India, Egypt, Greece, Rome. In modern times these centres are found much nigher the North Pole. Southern centres require Southern laborers, action, action. Science in this point of view is, and must be sectional in the best sense of that word, and must emanate with controlling force from sectional centres. This is particularly important, in reference to practical medicine, in which topography, climate, and race, modify diseases quite as much as they do the plants and animals, the flora and fauna of different geographical sections. Let honorable rivalry be the motto of the South. Observe, think, write, publish. It is unconstitutional to require the North to do all the thinking and teaching for the South. Let each reader send his contribution. Two thousand a year! The mine will be diligently worked.—

EDITOR

## OBITUARY.

RANDOLPHSVILLE, Polk County, Texas, Sept. 9, 1856.

**DR. JOHN A. MORGAN**, departed this life September 8th, 1856.

In obedience to the summons of death given by the Supreme Grand Master, our brother has removed his membership from Eureka Lodge, No. 161, to the Celestial Lodge above.

As a husband, he was gentle and tender; as a neighbor, he was kind and courteous; as a friend and brother, he was frank, open and generous; and as a Mason, he was exemplary and always full of charity. The poor, the widow and orphan join with us in mourning him.

As a public testimony of our respect, be it resolved—

1st. That we extend our heart-felt sympathies to the surviving widow of our departed Brother.

2d. That we will wear the usual badge of mourning for thirty days, and clothe the furniture of the Lodge in the habiliments of mourning six months.

3d. That a copy of the above preamble and resolutions be handed to our Brother's widow, and be published in the New Orleans Medical & Surgical Journal and Picayune.

By order of the Lodge Committee :

JOHN S. CLEVELAND,  
LEROY THOMAS,  
O. TEAGARDEN.

OTIS RUSH, Secretary.

## Editor's Office.—Notices.

NOVEMBER, 1856.

### COMMUNICATIONS AND TRANSLATIONS RECEIVED.

JAMES E. SMITH, M.D.,  
M. MORTON DOWLER, M.D.  
C. S. FENNER, M.D.

ARMAND MERCIER, D.M.P., of New Orleans, will report in the January number, two of his recent and successful operations for aneurism of the femoral and external iliac arteries.

Also, a successful operation for aneurism of the iliac artery, by DABET, D.M. P., of New Orleans.

The Editor regrets that he has neither the time nor ability to answer many letters of inquiry concerning the fauna of Louisiana, philosophical instruments, and medical topics. He is obliged to postpone to an uncertain future, answers which have been solicited to appear in the pages of the Journal, concerning, the physiology of the placenta, the prevalence of fibrous tumors of the uterus among negroes, endermic medication, &c.

### BOOKS, &c.

NEW MEDICAL JOURNALS—*The California State Medical Journal*. July. No. 1: Quarterly Edited by John F. Morse, M.D., Sacramento. 1856.

*The Medical World*. Editors: J. V. C. Smith, M.D., and Edward Sutton Smith M.D.; Boston. Weekly.

*The Physicians Visiting List &c.*, for 1857. Phila. Lindsay & Blakiston.

*A Practical Treatise upon the Diseases of the Testis, and of the Spermatie Cord and Scrotum*, with numerous wood engravings: By T. B. Curling, F.R.S., etc. Second American, from the second revised and enlarged English edition. Pp. 419. 8vo. Philadelphia: Blanchard and Lea. 1856. From Mr. J. C. Morgan, bookseller Exchange Place, New Orleans.

*Sea-Sickness, its Cause, Nature, and Treatment*: By Mr. Nelken, D.M.P., &c.; resident Surgeon in the New York State Hospital, Ward's Island. Pp. 32. 12mo. New York: Stringer & Townsend. 1856.

*Essays on the Physiology of the Nervous System, with an Appendix on Hydrophobia*: By Benjamin Haskell, M.D., of Rockport, Mass. Pp. 88. 8vo. Gloucester: 1856; From the author.

*Human Physiology, Statical and dynamical; or the Conditions and Course of Life in Man*. By John William Draper, M.D., LL.D., Professor of Chemistry and Physiology in the University of New York; illustrated by nearly 300 wood engraving Pp. xvi. 649. 8vo. New York: Harper & Brothers. 1856. From Mr. J. C. Morgan, bookseller, Exchange Place, N. O.



- Practical Anatomy; a new arrangement of the London Dissector, with numerous modifications and additions: with illustrations:* By D. Hayes Agnew, M.D., lecturer on Anatomy, and Surgeon to the Philadelphia (Blockley) Hospital Pp. 310; large 12mo. Philadelphia: J. B. Lippincott & Co., 1856. From the Publishers.
- Experiments upon Digestion:* By Francis G. Smith, M.D., Professor of the Institutes of Medicine in the Medical department of Pennsylvania College. Pp. 16. Philadelphia: 1856. From the author.
- Report of the Eastern Lunatic Asylum in the City of Williamsburg, Virginia; 1853-4 and 1854-5.* Pp. 74. Williamsburg: Va.; 1856.
- On Oedema Glottidis resulting from Typhus Fever:* By Thomas Addis Emmet, M.D., late Visiting Physician to the New York State Emigrant Hospital, Ward's Island. Pp. 20. Philadelphia: 1856.
- Transactions of the Seventh Annual Meeting of the North Carolina Medical Society of the State of North Carolina; Held at Raleigh, N. C., May, 1856.* Pp. 63. Wilmington, N. C.: 1856.
- The History and Statistics of Ovariotomy, and the circumstances under which the Operation may be regarded as Safe and Expedient: Being a Dissertation to which the prize of the Massachusetts Medical Society was awarded, May, 1856.* By George H. Lyman, M.D. Pp. 146. 8vo. Boston: 1856. From the author.

## TABLE OF CONTENTS.

## ORIGINAL COMMUNICATIONS.

ART. I.—A Cogitation on Public Health. By M. Morton Dowler, M. D., New Orleans.....	293
ART. II.—Case of Cachexia Africana, or Dirt-Eating. By Humphrey Peake, M.D., of Arkadelphia, Arkansas.....	299
ART. III.—Abscess of the Liver. By A. Davis Brasher, M. D., Belle Point, Arkansas.....	301
ART. IV.—Fragmentary Notes on Pathological Anatomy. By Bennett Dowler, M. D., (Continued from page 178.).....	302
ART. V.—Transcendental Medicine. By Bennett Dowler, M. D.....	312
ART. VI.—Esthetical and Medical Reflections upon the Popularization of Anatomy and Physiology in the United States: with Observations upon the Signs of the Times. By Bennet Dowler, M. D., New Orleans.	325
ART. VII.—Yellow Fever and Quarantine.—Brief Comments on the Published Opinions of Certain Learned Bodies. By E. D. Fenner, M. D., New Orleans.....	339

## PROGRESS OF MEDICINE.

ART. I.—Experiments on the Glycogenic Functions of the Liver, performed during the Course of Physiology at the School of Medicine of Bordeaux. By M. Cyprien Oré, Professor. Reported by J. Jeannel, Professor in said School. Translated from the <i>Journal de Médecine de Bordeaux</i> , by M. Morton Dowler, M. D., New Orleans.....	351
ART. II.—M. Trousseau on the Bronzed Disease of Addison. <i>L'Union Médicale</i> . Aug. 7, 1856. Translated by M. Morton Dowler, M. D., New Orleans.....	352
ART. III.—Chimie Appliquée a la Physiologie et à la Thérapeutique, par M. le Docteur Mailhe. Un vol. in 8. de XXXII. 704 pages. Paris, chez Victor Masson.....	
Chemistry Applied to Physiology and Therapeutics. By Dr. Mailhe, 1 vol., 8vo. Pp. XXXII. 704, Paris, Victor Masson.	

An Analysis by Dr. Martin Magron. Translated from the Gazette Hebdomadaire de Médecine et de Chirurgie of August. 1856. By M. Morton Dowler, M. D., New Orleans.....	367
ART. IV.—Remarks on the Treatment on the Cases of Diabetes admitted into the Glasgow Royal Infirmary, from November 1854, till April, 1856. By Joseph Bell, M. D., Physician to the Royal Infirmary.....	380
ART. V.—On the Influence of Circumcision in Preventing Syphilis.....	392
ART. VI.—On the Change which has Occurred in the Character and Requisite Treatment of Inflammatory Diseases of the Lungs, within the Last Four or Five Years, in the Eastern Townships. By F. D. Gilbert, M. R. C. S. L., Hatley, E. T.....	394
ART. VII.—The Treatment of Scarlatina Anginosa. By Pye H. Chavasse, Esq., F. R. C. S.....	396
ART. VIII.—On the Treatment of Fever by Large and Frequently Repeated Doses of Quinine. By Dr. Thomas B. Peacock, Assistant Physician to St. Thomas' Hospital.....	398
ART. IX.—On the Hemorrhagic Diathesis. By Dr. Hyde Salter, Assistant Physician to Charing-Cross Hospital School, and Assistant Physician to the Hospital.....	401
ART. X.—On Apoplexy in relation to Chronic Renal Disease By W. Sennhouse Kirkes, M. D., Assistant Physician to St. Bartholomew's Hospital.....	406
ART. XI.—Case of Hemorrhagic Diathesis. By Dr. John R. Miller.....	414
ART. XII.—On Traumatic Extravasation of Blood within the Arachnoid. By Prescott Hewett, Esq., Professor of Surgery to the Royal College of Surgeons of England.....	417

---

#### REVIEWS.

REV. I.—Human Physiology. Statical and Dynamical; or, the Conditions and Course of the Life of Man. By John William Draper, M. D., LL. D., Professor of Chemistry and Physiology in the University of New York.....	424
REV. II.—New Remedies with Formula for their Preparation and Administration. By Robley Dunglison, M. D., Professor of the Institutes of Medicine, etc., in the Jefferson Medical College of Philadelphia. Pp. 769. Large 8vo. Seventh edition with numerous additions. Philadelphia: Blanchard & Lea, 1856.....	437

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
OF THE

## YELLOW FEVER OF 1853.

*With Topographical, Chronological and Historical Sketches of the Epidemics of New Orleans since their origin in 1796, illustrative of the Quarantine Question.*

BY BENNET DOWLER, M. D.

New Orleans: 1854. 66 large octavo pages. Price—50 Cents per copy; three copies for \$1; 100 copies for \$25.

 Orders should be directed to Delta Office, 76 Camp-street, New Orleans.

The editor of this journal considers this pamphlet the best that has been written on the subject. It contains much valuable matter in a small compass, and adds to the many laurels already won by the indefatigable author in this and other branches of investigation. His last chapter, while it has all the vigor and truthfulness of the poet, introduces us to the bedside of the dying and the dead—goes beyond the usual boundaries of observation, and brings back a wreath to crown the altar of Science, from a region too sterile for the poet, and even for the less energetic philosopher,—[*Phil. Med. and Surg. Jour.*]

In the sixty-six pages, of which this pamphlet consists, Dr. Dowler has contrived to condense more matter of an important and instructive character, bearing directly upon the etiology and character of Yellow Fever, than would suffice, if fully developed and examined in all its relations, to fill a goodly sized volume of several hundred pages; and that, too, without any undue extension of subject or prolixity of style.—[*The American Journal of the Medical Sciences.*]



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# THE NEW ORLEANS MEDICAL AND SURGICAL JOURNAL,

FOR JANUARY, 1857.

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## ORIGINAL COMMUNICATIONS.

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ART. I.—*Cases Illustrating the Practice of Medicine in the Counties of Rusk and Panola* : By JAMES E. SMITH, M. D., of Pine Hill, Rusk Co., Texas.

CASE I.—Was called about 12 o'clock at night on the 25th of September, 1853, to visit professionally, Miss E. R., aged about 15 years. I was informed by the messenger (her brother) that she had retired for the night in her usual health, in fact the evening previous had exhibited no visible indication of disease ; on the contrary was more lively and in higher spirits than was common with her. Arrived at 1 o'clock, and found her in the following condition, viz. insensible to all external objects, in a state of wild delirium—great restlessness, but when still would lie supine ; limbs paralyzed apparently ; jaws firmly closed ; deglutition difficult ; respiration slow, stertorous and noisy, (from the fact, that her tonsils were habitually enlarged,) and bowels costive. Coupled with or rather superadded to those symptoms, a cold clammy perspiration exuded from the surface of the body generally ; radial artery was retarded and nearly extinct at the wrist, and she had an epileptic spasm every 30 or 40 minutes. I had, two or three weeks previously, treated her for common intermittent fever, from which she recovered under the use of mild mercurials and quinine. In "summing up the evidence" from the witnesses before me in the way of symptoms, and the previous attack of intermittent fever, as collateral testimony, I was at no loss to make out the diagnosis as the delirious form of pernicious intermittent fever, or in the common parlance of the country "*Congestive Chill and Fever.*"

*Treatment.*—To equalize the circulation and have a revulsive effect on the brain, I prescribed a hot foot bath, made more stimulating by the addition of salt, cayenne pepper and mustard, at the same time pouring cold water from a height on her head—after which her arms and legs to be rubbed assiduously with mustard and pepper—also a mustard plaster to be applied the whole length of the spine, and to be cupped in each temple and also over the region of the liver and stomach, and to take the following, every half hour until emesis was produced: *R.* Carb. Ammonia ℥ii; Tinct. Opium ℥i ss; Gum Arabic q. s.; water ℥ii—mix. Dose, a table-spoonful. In the course of three hours she became a little warmer and her pulse more distinct, having in the mean time, taken nearly all the above mixture. Some disposition to emesis being present, it was encouraged by the administration of tepid water, until free and copious vomiting took place. I will only add "*en passant*" that the foot bath, as well as the pouring of the water on her head, were several times repeated, and cold cloths were kept continuously applied to her fore-head, and the rubbing was kept up only when a "fit" was on her. She ejected from her stomach some of the remains of a half digested supper and a great quantity of fluid tinged with bile.

26th, 8 o'clock, A. M.—Had had four spasms since my arrival—none in the last 2 hours, pulse 95, weak and fine though corded; skin warmer, though not as warm as natural; perspiration not so clammy, inclined to be more normal; still delirious, more composed, however; does not recognize any one—does not complain of the rubefacients or of the cold water; she does not breathe so badly; neither is deglutition so difficult; directed her hair to be cut off and the back of her head and neck to be blistered, the blister to extend to the first dorsal vertebra. Continue cold cloths to her fore-head—hot rocks to her feet, and to take the following: *R.* Calomel grs. xl; Sulph. Quinine grs. xxiv; Sulph. Morph. gr. i; Mix, and divide into 4 powders, and take one every three hours.

I remained with the patient during the day. Under the influence of the medicine, her skin acted finely and naturally—the blister drew well, and by 10 o'clock at night, she in a great measure recovered her consciousness; she rested well and slept naturally. Continued the quinine in six grain doses with 1-6 of a grain of morphia every 4 hours, and omit the calomel.

27th, 8 o'clock.—Bowels had been moved 4 times, had taken in all 48 grains of quinine, and was fully under the influence of the drug—was quite rational; was not aware of any of the circumstances that had occurred since her attack. Complained very much of the blister and pepper and mustard. Skin cool and natural; pulse 76; respiration 18;



some appetite ; in fact the system now was completely, to all appearance, redeemed, disenthralled and liberated from the bondage of disease, and was in apparent health. *R.* Sulph. quinine grs. xii. ; Super Carb. Soda grs. xxiv. ; Sulph. Morphia gr. ss ; Ipecac grs. ii ; mix, and divide into six powders ; one every 2 hours.

28th.—Patient had rested well during the day and night until about the time of the access of the paroxysm on the 25th, when she became convulsed with an epileptiform spasm similar to those she previously had ; this was followed by slight fever which lasted 4 or 5 hours. Before the spasm came on she had all the symptoms of a chill, which, however, did not continue long. Present condition ; very weak and feeble ; tongue white and coated ; skin dry ; pulse 90 ; mind clear ; bowels not moved since the calomel operated. Direct the blister to be dressed with savin ointment, and *R.* Spirits Dulc. Nit.  $\text{℥ii}$  ; Quinine grs. x ; Tinct. Valerian  $\text{℥i}$  ; dose, a table-spoonful every 4 hours, alternated with 2 grs. Blue Mass,  $\frac{1}{2}$  grain Ipecac, and  $\frac{1}{8}$  grain of Morphia.

29th.—Better in every way ; secretions in good condition ; tongue cleaned off ; skin acting well. Continue prescription, with the exception of the blue mass, ipecac, and morphia. At 8 o'clock, P. M., on the 30th, to take 10 grains quinine.

Oct. 1st.—Missed paroxysm ; nearly well. Convalescent during 8 or 10 days under the use of infusion cinchona, serpentaria, and valerian occasionally.

Case 2.—Called January 5th, 1854, to see A. B., aged 13 years—was informed that the patient was found in the “cotton house” in a state of insensibility and was cold and shivering, his body covered with a cold clammy sweat, &c., &c. Upon my arrival, found him with very cold extremities, and body still sweating the characteristic cold sweat—respiration hurried—pulse almost imperceptible—some degree of consciousness—complained of no pain, only his stomach was hot and burning—craved cold water incessantly.

*Prescription*—Directed his clothes to be taken off, then laid him out on a sheet, on the floor, and immediately dashed forcibly 3 buckets full of cold water on him ; had him then wrapped up in hot blankets, and applied hot rocks to feet and legs, and mustard plasters to stomach and spine, and to take laudanum gtt. 30, with 3 grs. quinine sulph., every hour until reaction occurred, or he had taken 4 doses. At the end of three hours there was free and copious diaphoresis, and a healthy warm glow over his whole system and he was in a calm slumber. I directed him to be undisturbed for eight or 10 hours—discontinuing the laudanum, and at the end of that time, begin on 5 grain doses of sulph. quinine, and repeat every two hours until six doses were taken.

6th, 10 o'clock.—Patient composed and quiet ; pulse full and soft ; 70 pulsations to a minute ; tongue slightly coated ; expresses himself comfortable and easy ; under the full influence of quinine ; roaring in the ears, fulness about head &c.

R. Sulph. Quinine,  
Blue Mass,  
Pulv. Doveri, ā ā grs. ix,  
Sup. Carb. Soda grs. xviii ;

Mix and divide into 9 powders ; directed 1 powder every two hours.

7th.—Patient better ; missed paroxysm. He recovered his usual health in a few days and has had no relapse of intermittent fever to this day (Aug. 18th 1856). The previous summer and fall, (1853) he had repeatedly had "chills and fever," and continued to relapse every week.

Case 3.—Was called Oct. 18th, 1852, to see an infant child of Mr. J. B. L., aged 2 months ; very small ; weight  $4\frac{1}{2}$  lbs. ; very much emaciated. Was informed that the child had had three chills and was now in the febrile stage with the third.

R. Spirits Nitre Dulce f 3i ;  
Comp. Tinct. Opii. gtt. x ;

Aqua 3i ; Mix : dose a table-spoonful every hour until the cessation of the fever, and until free diaphoresis ensued. R. Quinine Sulph. grs. iss ; Hyd. Cum Creta grs. iss ; Calc. Magnesia grs. ii : make 7 powders, begin 8 hours before next expected chill and give one powder in sage-tea, or "breast milk" every hour until all are taken. The child missed the next paroxysm and has never had another chill, and is now a fine large well grown child of its age (Sept. 1st, 1856).

Case 4.—Visited Oct. 12th, 1855, Mr. James B., aged about 45 or 50 years—nervous temperament. Found him severely attacked with acute gastritis. His general condition was as follows, viz : small, weak and attenuated pulse, very frequent, 140 beats to the minute ;—red, dry tongue, cracked and fissured in the centre, with smooth edges—constant nausea and frequent vomiting ; very great tenderness over the epigastric region and entire helpless prostration ; bowels costive ; intellect clear ; hippocratic countenance and great physical suffering.

He had been sick 48 hours, and I would certainly have bled and cupped him, had it not have been for his *positive objections to this practice*.—I, however, prescribed as follows : R. Calomel grs. xxiv ; Opium Pulv. grs. v : Divide into 10 pills ; directed 2 every 2 hours ; to have a blister 6 by 8 over his stomach ; to drink slippery elm water ; to have his feet bathed in hot salt water, as hot as he could bear.

Oct. 13th, 6 o'clock, A. M.—Symptoms about the same, as far as the pulse and the tongue were concerned ; blister had drawn well, relieving the epigastric distress and nausea ; no vomiting in the last 8 or 10 hours ; bowels had been moved three times. *Prescription* : Continue the calomel and opium 8 hours longer, prolonging the interval to three hours between doses ; continue elm water, and dress blister with mercurial ointment.

6 o'clock, P. M.—Somewhat better ; circulation 15 beats to the minute slower, and not so weak, or attenuated as at last visit ; tongue still dry ; bowels moved once ; liver acting well ; skin somewhat moist :—*Prescription* : The Calomel and Opium to be continued at intervals of 8 hours, alternated with a table-spoonful of the following every 2 hours : R. Spirits turpentine  $\text{ʒi}$  ; Gum Arabic  $\text{ʒiv}$  ; Comp. Tinct. Opium  $\text{ʒi}$  ; Water  $\text{ʒviii}$  ; mix well and make solution. Directed the nurse to let him rest without disturbance to give medicine, should he sleep.

8 o'clock, 14th.—He had slept a good night's sleep ; much better in every respect ; pulse 90, soft and regular ; skin moist ; tongue has slight white coat on it, fissured and cracked appearance gone, not so red, and is moist ; had taken the calomel and opium at the regular times and 4 doses of the turpentine. *Prescription* : Suspend the mercurial, and continue the turpentine every 6 hours.

Oct. 15th.—Improving very fast ; general appearance greatly altered for the better ; has some appetite ; pulse 80, full, soft, and natural ; tongue moist and coated white ; has had several consistent bilious evacuations, and copious secretion and excretion of urine. *Prescription* : Continue the turpentine every 8 hours, and take  $\frac{1}{2}$  grain of quinine three times a day in ounce of Port wine.

16th.—Still improving ; discharged cured.

23d.—Was requested to visit Mr. B., was informed that he had relapsed, &c. Upon inquiry I was informed that he had been very imprudent—he had walked to his cow lot and had busied himself about his cattle ; had exposed himself in the open air at all hours ; had exerted himself to such a degree, that all the above enumerated symptoms returned with redoubled vigor and violence, viz. nausea, vomiting, great prostration, costive bowels, hurried circulation, dry slick tongue, red and fiery, epigastric tenderness, &c., &c.

I gave turpentine, morphia, calomel, opium ; cupped and blistered him, and all without avail. He died on the 29th. Thus we see this man lost a useful life, by his own imprudence. I had cautioned him of the extreme danger of even the *erect position*, and had used all the power I had as a physician over him, to prevent undue exposure and exercise. Still he went on, the self-made victim of his own imprudence, and we have seen the sad result.



Dr. Stokes has some remarks so very pertinent, illustrating the great danger of exercise and the erect position during the convalescence from gastritis, that I must quote them. He says, "I shall here mention a rule which should be carefully observed in the after treatment. A patient has recovered from the violent symptoms of the disease ; the fever, thirst, pain, epigastric tenderness and sympathetic affections have subsided, but still he is confined to the bed, and in a state of great debility. Some patients, under these circumstances, have been unfortunately lost by allowing them to sit up in bed or on the night chair. The nurse will sometimes through ignorance, suffer a patient, thus enfeebled, to risk his life by sitting up in bed. Sometimes, during the course of the night, she is overcome with sleep ; the patient has a call to empty his bowels ; and not wishing to disturb her, attempts to get up, and is found, sometime afterwards, sitting on the night chair *quite dead*. This is an unfortunate termination for the physician as well as the patient."

A German author, Hoffmann, has written a treatise on the danger of the erect position, and in the course of the work, which is a very interesting one, he cites numerous instances of its bad effects. Mr. B., was in my hands, another lamentable instance of the bad effects of a too early resumption of the erect position, and undue exercise when the system worn down by the disease, was unable to stand the burden imposed upon it.

[To be Continued.]

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ART. II.—*Lithotrixy* : By C. S. FENNER, M. D., of Memphis, Tenn. EARLY in November, '55, John C. Weaver, Esq., requested me to sound a negro man, for stone in the bladder. He was about 30 years of age ; black, and unusually intelligent ; he had suffered with symptoms of stone, for ten years, was at times incapacitated for field labor, and had repeatedly solicited his master to have him cut. His general health, was good with the exception of a valvular disease of the heart.

I introduced a sound, and immediately detected the presence of a calculus, the concussion being distinctly heard by persons at a distance of several feet. I determined to crush it. The next day, after injecting into the bladder a quantity of water, I introduced a medium sized Heurteloup's lithotripter with rack movement, opened the jaws, seized the stone and broke it into fragments. I picked up two or three of the larger pieces, crushed them, and withdrew the instrument. The whole operation did not last five minutes ; not a drop of blood was lost, and the pain experienced was but trifling. He passed fragments of stone for two days, when he felt entirely relieved, and the sound gave no indi-

cation of any foreign body in the bladder. The third night he slept without waking, which he had not done before for years, having to pass his urine every hour or two during the night, as well as the day. The third day he went to the field and performed his accustomed amount of labor. From that time until his death, which happened late in the spring, from a disease of the Heart, he had no symptoms of stone.

I report this case not from anything unusual or peculiar connected with it, but simply as an instance of the facility with which in favorable cases, small stones may be broken and passed off by piece-meal, and the necessity for a painful and dangerous cutting operation obviated. Thanks to the exertions, perseverance, and inventive genius of Heurteloup, Leroy D'Etiolle, Civiale, Jacobson, and others, lithotrity has become one of the established operations of surgery, and applicable to a large majority of cases of stone in the bladder; it is almost entirely devoid of danger, ordinarily gives but little pain, can, if necessary, be repeated, produces in the patient no fearful apprehensions, inducing him to suffer for years before he applies for surgical assistance, during which time his disease may become complicated, his health broken down by long continued suffering, and his chances of recovery proportionately diminished.

There are some surgeons at the present day, particularly those who have been unusually successful lithotomists, who still advocate the cutting operation, and resort to it indiscriminately in all cases applying to them for relief. Even J. F. South, the able English editor of *Chelius' Surgery*, is disposed to favor the operation of lithotomy in all cases, simply because within his own practice, and observations, it has generally been successful, at the same time acknowledging that he has had but little experience in lithotrity. Such reasoning is not in accordance with the enlightened spirit of the surgical science of the present age.—There are cases in which lithotomy is the preferable, or, perhaps, the only justifiable operation, as in very young children; where there is great irritability of the bladder; when the introduction of an instrument gives rise to rigors; when there is enlargement or chronic disease of the prostate; when the stone is of very large size, &c. The latter objection applies equally to lithotomy, and is not an insurmountable obstacle to lithotrity. I remember during my pupilage with the late George McClellan, assisting him in crushing a stone that required the jaws of the instrument to be opened four inches, in order to seize the calculus; yet the patient, after repeated operations, was entirely relieved. My friend, Dr. Grant, of this city, successfully crushed and removed a very large calculus the fragments of which, collected, nearly fill an ordinary quinine bottle. Neither of these stones could have been removed by the lateral operation without first being broken. Civiale,

Amussat, and other skilful lithotritists have successfully crushed stones in very young children, but the small size of the urethra in children renders the operation much more difficult. It must be remembered, however, that in children the calculus is usually small, and, if brought within the jaws of the instrument easily broken.

Brodie, the highest living authority, says, "It would be a great error to represent lithotrity as preferable on all occasions to lithotomy ; but it is so in a great many instances." He further adds, "With the exception of such cases as those which have been enumerated, there are few to which this method (lithotrity) may not be advantageously applied. It may be said that the exceptions are numerous ; but they are the result chiefly of delay. If a patient seeks the assistance of a competent surgeon within six, or even twelve months after a calculus has descended from the kidney into the bladder, the urine having remained acid, it will rarely happen that he may not obtain a cure by a single operation, and with so small an amount of danger, that it need scarcely enter into his calculations. \* \* \* \* It would be absurd to say, and it would be unreasonable of human kind to expect, that an operation which has for its object to relieve them of a disease so terrible as that of stone in the bladder, can be always free from inconvenience, and difficulty, and danger. Nevertheless, from what experience I have had, I am satisfied that the operation of lithotrity, if had recourse to only in proper cases, is not only much more successful than that of lithotomy, but that it is liable to fewer objections than almost any other of the principal operations of surgery."

Of the different instruments employed for crushing stone, that of Heurteloup, with the subsequent improvements made by Weiss and others, is by far the best, combining great strength, with an almost unlimited capacity for seizing calculi of every size, from the smallest to the largest ordinarily found in the urinary bladder.

Jacobson's instrument answers a good purpose where the stone is small, and not too hard, and is particularly adapted to children ; with it there is no danger of injuring the walls of the bladder ; and its shape corresponds with the natural curvature of the urethral canal. These two instruments have nearly superseded the use of all others, and it seems scarcely possible that another can be invented, more perfectly adapted to the purposes for which they are intended.



ART. III.—*Dysentery; its History and Treatment*: By W. L. GAMMAGE, M. D., of Rusk, Cherokee County, Texas.

The above disease has been prevailing in our town, (Rusk, Cherokee Co., Texas,) and vicinity ever since about the 12th of July last, and with a degree of violence that neither myself nor the oldest physicians in our midst, remember ever to have witnessed.

A great diversity of treatment has prevailed, and, even yet, there is a division of opinion amongst the practitioners, as to which is the most successful plan. Many cases, simple in their nature, and presenting no alarming feature, have been cured by the most simple means, whilst others, which, in the out-set, were mild, have baffled the most laborious and continuous efforts of the practitioner, and have at last died. As a consequence of this fact, many of the people of the country have concluded that teas and gentle anodynes administered by domestic hands are quite as successful as the "Doctor's remedies." The fatality which has marked its course in many of these cases, makes a sad commentary upon the wisdom (?) (or rather want of it) of this triumph of prejudice!

The first case which attracted public attention and alarmed the public mind occurred in my own family. Matilda, a negress of 12 years, of robust constitution, and hitherto uniform good health, was reported to me as having "bloody Flux," on the 12th of July. I immediately examined her; found her tongue considerably furred, with a yellow brownish coating; skin soft and moist, pulse hard, and slightly accelerated; slight nausea, with frequent discharges of blood and mucus; great tormina, and considerable fulness of the abdomen.

At 8 P. M., on the 12th of July, I gave cal. 5 grs.; Hyd. Pilulæ 4 grs.; Dover's pow. 4 grs.; and recommended a teaspoonful of chalk mixture after every discharge; allowed nothing for drink but sage tea, and applied mustard over the whole abdomen.

13th; 8 P. M. Pill had not operated; gave a dose of oil; dysenteric discharges no better; continued the chalk-mixture.

14th; 8 P. M. Medicine had brought away several offensive, dark, fecal stools; but blood and mucus returned; immediately gave a pill of opium, and left her to rest.

15th, 8 P. M. Great pain in left lumbar region of the bowels, with increased tormina; less blood, though more mucus in the stools. Gave a mercurial pill with opium instead of Dover's powders, and applied a blister over the whole of the abdomen. This pill operated in twenty-four hours, bringing two copious dark offensive stools, and one very small, yellowish mass with traces of bile in it. (I had forgot to state that fever arose on the 15th, and ran very high).

17th ; 12 A. M. Dressed the blister with flaxseed poultice, and gave flaxseed tea as a constant drink. At night, gave her a pill of blue mass, 6 grs.; opium, 1 gr. She slept twelve hours with scarcely any intermission ; only three stools of blood and mucus in the twenty-four hours.

18th ; 8 P. M. Passed two stools and one blood faecal stool ; fever subsiding very rapidly.

20th. Has been resting quietly ; only about five stools of blood and mucus in the twenty-four hours ; feet and hands quite cool ; pulse 96 ; skin soft though dry. Gave brandy toddy and paregoric every hour. She continued to improve slowly until the 26th, when, complaining of being very hungry and tired of soups, we gave her some biscuit and coffee. My wife gave her a small melon to play with, and in the morning, seeing some of the seeds sticking upon her clothes, we inquired how they came there; she "*didn't know nuffin 'bout 'em.*" However, she got well rapidly, and has been in fine health ever since. She afterwards acknowledged that she ate the melon, and then fearing that the seeds would betray her, gathered them up as well as she was able, in the dark, and *swallowed them all.*

The only interesting features which present themselves in the history of the above case, is the rapid improvement which followed the operation of the mercurials, and the reduction of the stools of blood and mucus, which took place, when the patient was largely under the influence of opium. However, just about this time, I was attacked with intermittent fever, which confined me to my bed nineteen days, during which time a number of cases had occurred, almost every one of which had been treated actively with mercurials, and the *majority* had either *died*, or *did die* after my *recovery*. This alarmed me. I began to inquire of myself if calomel and blue mass were obnoxious to the disease? Already, a strong prejudice existed in the community, which was rapidly gaining strength, against the use of these remedies. I was carried with the popular current, and resolved I would try other means. I soon found an opportunity. Mr. Miller's child, *æt.* two years, was attacked, and I was called in consultation with Dr. Miller. Found great tenderness of the bowels ; tongue red and raw on the edges and tip, coated with a dense, brown, dry fur in the centre ; applied plaster of diluted blistering cerate to the abdomen ; gave frequent injections of laudanum and starch ; administered rhubarb tea as a purgative, and recommended frequent warm mustard baths.

Next day called in company with Dr. Miller ; found the tongue still dry and red ; considerable nausea ; dry and hot skin, with increased arterial excitement, and no operation from the rhubarb tea, although

twenty-four hours had elapsed since administering it. At the urgent solicitation of Dr. M., I agreed that the child should have 1 gr. calomel and  $\frac{1}{2}$  gr. Dover's powders every four hours, until it had taken 4 grains of calomel; continued the mustard baths, and the injections after every alvine discharge.

*The patient died without any action from the calomel.*

I was now in a worse dilemma than ever. However, the next day Dr. Miller was severely attacked with dysentery. Upon being called to see him, I found him in great pain, discharging blood and mucus every half hour, and suffering the most intense agony, whilst at stool; pulse about 100; skin cool; sweating profusely; tongue moist, though red and fiery. Gave him two table-spoonfuls of oil; 20 drops of spts. turpentine, and 60 drops of laudanum in a half gill of stiff brandy toddy. This quieted him. Applied cups after scarifications freely over the bowels, wherever there was any pain; gave an injection of laudanum and starch; confined his drink to flaxseed and sage teas exclusively. This treatment was continued with slight variation for several days, when there being no abatement of the symptoms, I blistered over the stomach and bowels, and dressed the blister with *opium faces*, well saturated with laudanum. Substituted nit. silver and powdered opium with cold starch, as an injection, and gave every four hours  $\frac{1}{2}$  gr. morphia, and 2 grs. ipecac. This was continued several days with the occasional interposition of rhubarb and soda to move the bowels, all without much variation or abatement of the symptoms, save a partial control of the bowels, and almost a complete cessation of the blood in the stools, though in its stead were little lumpy excretions, resembling livid flesh and sometimes scybalaë, and on two occasions, a discharge of a large worm. The pulse was now 130; skin dry and hot; tongue perfectly dry and very red; body emaciated to an alarming extent, and entire wakefulness, except when under the influence of morphia, or an injection of laudanum; for the nit. silver had been abandoned several days. Up to this time there had been given him *no mercury*, though he frequently signified his willingness to take it.

In the meantime the disease was prevailing all through the country, and scarcely a day went by without recording the death of some one whom we had met only a few days before on the streets, in perfect health.

My practice became very burdensome just then, and I called Dr. Ragsdale in to help me with Dr. Miller's case. He advised the free use of mercurials, which was assented to, and the Dr. (M.) seemed to improve, the liver acted finely; the pulse came down 12 beats; he grew cheerful, and we began the use of quinine, which after a large



quantity had been given, controlled, to some extent, the fever, though the pulse rose to 130, sometimes rising a little higher and frequently going as low as 114.

Dr. Miller lingered until the 9th day of his illness and died very suddenly.

About this time I waited on Mr. P., in the country, who was attacked mildly, and controlled the dysentery without any difficulty with a mild laxative, and a simple anodyne course ; yet he sunk rapidly into a nervous prostration *and died*. No mercury, nor indeed any thing was used in this case which could have exhausted the natural powers of the system. But *he died* in spite of apparently the most successful efforts for controlling the local disease, and in spite of the most anxious and watchful solicitude.

The disease still raged, and *like the grim master of a great sacrifice coming forth from his dark and noisome aceldama of human hopes and human lives*, continued to strike down the strong and athletic as well as the weak and feeble.

Already had Dr. R—le given up to the inexorable and implacable disease a bright eyed, fairy child of four summers. Already had Dr. I—s consigned to the silent tomb, his only boy. Already had Dr. M. closed the eyes of two of his "*household treasures*," in that everlasting sleep which knows no awakening, and given to the *gloom and the silence of the grave*, her who had cheered him in his sorrows and rejoiced with him in his prosperity for ten years. And, to give the grand climax to this series of disasters to our brethren of the profession, Dr. H—s, after consigning to the grave, an aunt, and a niece, and a brother, all victims to the dysentery, lost all, save one solitary member of his household—a wife who had clung to him through all the devious paths of life with a devotion *often read of, but seldom seen before*, a little "Lassie" with bright blue eyes and flaxen ringlets that had only seen five summers, and a tender infant, the last and tenderest link of that interesting household, and *still the pestilence raged !*

Early in September, I was called to see some negroes at I. D.'s plantation. A boy 12 years of age, had the dysentery very bad ; tongue red, papillæ enlarged and very red ; skin hot ; bowels very tender and constant discharge of blood and mucus. I gave him 6 grs. blue mass, 1 gr. of opium, every 4 hours until he had taken 18 grs. of blue mass ; gave him then 5 grains Dover's powders after every bloody stool, and applied mustard to the abdomen with an occasional mustard pedeluvia. This treatment was continued with suitable modifications for eight days, until the case was discharged cured. Here was a new era in my treatment. I had arisen superior to the prejudice against an innocent, though much

abused remedy, when in the hands of a *quack*. I had given it a fair trial and with complete success.

Two other cases presented themselves. I adopted pretty much the same plan, using blue mass sufficient to promote healthy and copious bilious and fæcal stools from the bowels in the early stages. I gave opium in combinations to relieve the spasm and stricture of the bowels, and used mustard to control the tenderness and soreness, which presented themselves in the immediate locality of the *lesion*. Opium in all its forms, I found highly useful, and I might have added, essentially necessary, inasmuch as there was scarcely any case where antispasmodics and anodynes were not imperatively demanded.

Another case presented itself, that of a little girl, eight years old, suffering great pain, and having a bloody mucus stool every half hour. I gave her 10 grains of blue mass, 1 grain of ipecac, and  $\frac{1}{2}$  grain opium, administering an injection of laudanum ; gave her flaxseed tea to drink, and applied mustard over the bowels ; moved off the mercurial with a dose of oil, spirits turpentine and laudanum. After the free evacuation of the bowels, I gave her large doses of paregoric, injections of laudanum and starch, and kept up the mustard applications. In a few days she was well.

By this time her father was attacked very severely. I gave him 10 grs. blue mass, 1 gr. ipecac,  $\frac{1}{2}$  gr. morphia every four hours ; blistered his abdomen with mustard and confined him in the recumbent posture, with no water but toast water, and no food but squirrel soup ; facilitated the operation of the blue mass by a dose of aromatic rhubarb tea ; treated him afterwards with large doses of opium. He recovered rapidly. And so I went on for two months with unparalleled success ; only losing two cases from this time until now. There were two of those cases which I treated in September, and the 1st of October, which are worthy of a special remark, and I shall accordingly notice them.

Mrs. Collier was attacked with dysentery on Tuesday, whilst returning home from the west. She sent for me on Sunday morning. I found her complaining of extreme tenderness over the bowels, so much so indeed that she could not bear the weight of my hand ; her tongue had a dense, slimy, brownish coat upon it ; her pulse was 138 ; her pupils very much dilated, and an unusual brightness and wildness in the eyes ; her feet and hands were cold, and her forehead was covered with a profuse clammy perspiration. I applied a large mustard poultice over the bowels ; gave her a stiff dram with  $\frac{1}{2}$  gr. morphia in it ; had her hands and feet rubbed ; a warm rock to the foot of the bed and then gave her 24 grains of blue mass and 6 grains of opium in four pills ; one every four hours, with

directions that she should have no cold water to drink, but as much brandy as she could be prevailed upon to take.

Next day at 12 o'clock returned; found her in almost complete collapse; feet and hands cold, pulse 150; head and body sweating profusely; bowels in great disorder; vomiting continually. I found that the blue mass and opium had had no effect, and that the stomach refused every sort of medicine that was offered. I was asked what I thought of her condition? and my answer was, that *she was bound to die*. I asked her if she would take medicine? she said *no*. I, however, left a prescription, with specific directions for the conduction of her case, and left. Next morning I heard that she was a great deal worse, and would probably die in a few hours. The next day, however, I was told that she was on the mend. I went down and found that the blue mass had operated finely, bringing away copious, black, foetid stools, and healthy bile and that there had been very little blood in any of the discharges. I prevailed upon her to take medicine. She is now well. *I lost my practice in that family by being honest and telling what I thought to be true.*

On the 25th day of September, I was called to see *Joel Holcombe*, æt. 16, of stout, robust constitution and general good health. He had a high fever; dry and parched tongue; hot, rough skin; great thirst, dysenteric stools every half hour. Gave oil of turpentine and laudanum; cupped freely over the region of the bowels, after which applied mustard plasters. The oil operated, having brought away copious, black, foetid stools, immediately followed, however, by bloody stools. Injections created great pain, and were always dreaded by the patient. I gave 1½ grains of opium with 3 grains of ipecac, every four hours, from this time, occasionally interposing blue mass, ipecac and opium with more or less improvement, until about the 30th, when the pains becoming very severe, and the tenesmus almost insupportable. I increased the ipecac to 2 grains, and gave 30 grains of blue mass; applied a blister over the bowels. The blue mass operated, and brought immense quantities of foetid bile, and with the aid of an occasional dose of rhubarb tea, kept up this condition of the bowels until the pulse went down to 90 beats in the minute. The tongue now began to assume a more natural color, and to get moist. By the 4th of October I thought I had procured a sufficient cessation and abatement of all the aggravated symptoms, to try the use of quinine; but upon trial, the tongue got red and dry, the fever returned, and the dysentery set in anew. I applied a warm wheat-bran poultice over the bowels, gave more blue mass, and on the 9th, having procured a very considerable amount of relaxation, and reduced the pulse to 90 again, I once more tried the quinine, but with the same result. I gave a large dose of oil of turpentine and laudanum;



emptied the bowels freely, and on the 9th, gave 4 grs. quinine, 2 grs. ipecac, and  $\frac{1}{4}$  grain of morphia, every four hours; suspended it twelve hours and then gave it for twenty-four hours, with the most complete success, entirely subduing the fever, and bringing the pulse down to 76 beats in the minute. The whole body was in a gentle perspiration, the dysentery being completely subdued. The tongue was coated over with a light, soft, semiluculent fur; gums slightly ptyalized. In fact, convalescence had fairly set in. A free use of brandy, with an occasional dose of sulphur completed the cure.

At this time there are but few cases in the country, and there is a fair probability that the epidemic has almost disappeared, to the great joy of the physicians as well as the people.

In summing up the result of the past four months' practice of medicine, it appears to me that the profession in this town has but slight cause of congratulation, unless it is for the self-sacrificing devotion which its members have exercised in the performance of their sometimes painful, always laborious, and too often, thankless mission; certainly never since our humble professional career began, have we seen so much pain and affliction, nor felt so much anxious solicitude as in this short period.

The result of my practice has convinced me of one fact, and it is this, the true physician has a high responsibility before him, and, regardless of popular prejudice—regardless of all *that* thrift which *may* follow fawning, he can not be true to himself, to his mission, nor his patients, whose lives are in his keeping, (a sacred trust,) unless he sternly and defiantly pursues that treatment, which his conscience tells him is right, and which the symptoms of disease seem to require.

OCTOBER 25, 1856.

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#### *Supplement to the Article on Dysentery.*

After concluding and dispatching my former article on the Epidemic Dysentery which has prevailed in our county during the past summer and autumn, I had an opportunity of testing, more fully, my peculiar views in regard to the treatment, to wit: On the 24th of October, when I was called to see a child of S. J., æt. 2 years. It had been passing bloody and mucous stools for six days; and when I first saw it, the discharges were as frequent as every 90 minutes; it had a dry hot skin; pulse 140, hard and wiry, with occasional intermissions of a beat or two, then rapidly recovering the lost beats by accelerated speed; immediately after a discharge from the bowels, the pulse became so weak as to be almost imperceptible; the tongue was covered with a dense whiteish brown coat, without moisture, and reddened around the edges and

tip. There was no faecal matter at any time accompanying the stools. I gave him 5 grains of rhubarb, and 2 grains of Dover's powders every 3 hours, to be followed with a tea-spoonful of castor oil, 6 drops spirits turpentine, and 8 drops of laudanum; the whole body bathed in hot salt water, after which I applied a large mustard plaster over the bowels. In 9 hours the pulse fell to 120; the bowels were freely evacuated; dark, exceedingly foetid stools, with greatly diminished quantities of blood and mucus; the bowels were restrained with paregoric and aqua camphor.

At 4 o'clock the next morning, I gave him 2 grains of quinine every 2 hours in a tea-spoonful of paregoric, until 4 p. m.

Oct. 26th, 9 a. m.—Pulse 108; skin soft and smooth; tongue clearing off, and bloody stools only about every 4 hours. Gave the paregoric and camphor after every stool. At night the foot bath, and the mustard plaster over the stomach and bowels. There was some difficulty of urination, with an unusual discharge of blackish looking serum with the stools. Gave an infusion of buchu and flaxseed as a drink, and prescribed 2 grs. quinine,  $\frac{1}{4}$  gr. ipecac, in 40 drops of paregoric, every 2 hours from 12 o'clock at night until 12 next day.

27th 2 p. m.—Pulse 100; all the symptoms better; tongue coated over with a soft, thin, whitish coat; an occasional mixture of greenish flocculi with the stools. Patient extremely weak, and emaciated. Gave acacia mucilage, 4 oz., spts. turpentine 40 drops, paregoric 1 oz, ipecac 15 grains; dose, a tea-spoonful after every stool.

29th, 8 o'clock, a. m.—Pulse 94; skin moist; tongue clean; appetite completely restored; stools the same, except an occasional discharge of a milky-looking fluid, resembling chyme. I gave, upon the recommendation of Dr. W. R. Ragsdale, 15 grains of chlor. sodium, in broken doses, dissolved in seneka infusion. This produced copious, bilious, consistent stools, and almost completely suspended the discharge of blood. From this time until the cure was completed, I continued the turpentine emulsion, interposing occasionally with quinine and dov. pow., and, as a tonic, I gave infusion of columbo, quassia, and seneka, in good whisky. The child is now well.

During this treatment, two other children were very severely attacked with dysentery. The same treatment, with slight modifications, was pursued, excepting the use of blue mass instead of rhubarb, and common salt instead of oil. Both children had high fever and copious bloody stools, and both got well rapidly under the treatment.

REMARKS.—In regard to blue mass, I am more and more persuaded that it should always be preferred, not alone on account of its alterative properties, but, because it is safe, convenient, and eminently useful as a

laxative in disgorging the upper bowels, and subduing the general irritability of the system. Common salt has always exerted a very happy influence in controlling the hæmorrhagic tendency of the bowels, and when either given internally, or endermically in the form of a bath, acts as a styptic, as we see so happily illustrated when applied to the bleeding socket when we pull a tooth.

Ipecac and opium are invaluable—I had almost said indispensable—where there is high fever, dry, hot skin, and constant restlessness.

To one of those children spoken of above, I gave as much as  $1\frac{1}{2}$  grains of ipecac and 1 grain of opium every  $2\frac{1}{2}$  hours, without scarcely ever producing sensible nausea, or stupor.

At this date, (29th November,) the dysentery has pretty well subsided, but we constantly hear of its ravages in distant parts of the country. It is hoped that from these crude and ill-digested suggestions of mine, something hitherto obscure may be made light, and some peculiarities of treatment may be found beneficial to those who may suffer hereafter from this most loathsome and obstinate disease.

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ART. IV. *The Relations of Chemistry to Practical Medicine*\*: By ISAAC L. CRAWCOUR, M. D., *Professor of Chemistry and Medical Jurisprudence in the New Orleans School of Medicine.*

There is an idea prevalent among students of medicine, at the out-set of their career, but of which they become rapidly disabused, during the progress of their practice, that an attendance upon Lectures of Chemistry is a compulsory act, one followed by no practical benefit in the end, involving a loss of time, which might be more advantageously devoted to some more profitable subject. No idea can be more fallacious than this, and it will be my endeavor to show how intimately connected with Chemistry, is every branch of the studies which are essential to the medical student.

Among the various subjects which engage the attention of one who intends to devote himself to the practice of our profession, there are but two which may be considered fundamental, and, to stand upon a basis of their own, and these are Anatomy and Chemistry. Anatomy and Chemistry are positive sciences, depending upon direct experiment for their elucidation, requiring no hypothesis and partaking of the character of an art as well as of a science, since both demand a certain amount of manual dexterity. If we pass in review the other branches of study,

\*This paper contains the substance of the Introductory Lecture, delivered to the class of the New Orleans School of Medicine, November, 1856.



to which your attention will be directed during the time you are fitting yourselves for your profession, we shall see how far they are dependent upon these two.

An acquaintance with your weapons of defense against disease, the *Materia Medica*, depends, for its very existence, upon a knowledge of Chemistry. There can be no judicious practice of medicine, no well founded system of surgery, without physiology, and a correct physiology cannot exist without a combined knowledge of Chemistry and Anatomy. The practice of mid-wifery, the treatment of the numerous and obscure diseases of women and children, are but other phases of the Institutes of Medicine, and require the same guide. Anatomy and Chemistry are the two pillars which sustain the whole superstructure of the medical sciences.

We will now examine a little in detail, the objects and advantages of Chemistry, not only to the student of medicine but to the practitioner.

To the tyro, as well as to the advanced student, that which appeals most strongly to his mind, that which impresses him most forcibly with wonder, is the utter indestructibility of matter. In Chemistry, nothing is lost; the atom which was in existence at the period of the creation, is performing its destined work at the present day; the festering mass of corruption, which, to the eye of the vulgar, is destruction and decay—is, to the chemist, but a re-arrangement of atoms, which are living and will live again, to perform their accustomed task in the scheme of the universe. A burning body wastes and disappears, while nothing seems to be produced but warmth and light, which we are not in the habit of considering as substances, and when all have disappeared except, perhaps, some trifling ashes, it is naturally supposed that they are gone, lost, destroyed; but when the question is examined more exactly, we detect in the invisible stream of heated air, which ascends from the gloomy coal, a heated wax, the whole ponderable matter, only united in a new combination with the air and dissolved in it; yet, so far from being thereby destroyed, it has only become again what it was, before it existed in the form of charcoal or wax; an active agent in the business of the world, a main support of animal and vegetable life, and is still susceptible of running again and again the same round, as circumstances may determine; so that the same identical atom may be concealed for thousands of years in a limestone rock; may at length be quarried, set free in the lime kiln, mix with the air, be absorbed by it from plants, and in succession become a part of the frames of myriads of living beings, till some new concurrence of events, once more consigns it to a long repose, which, however, in no way unfits it from resuming its former activity. All that age or decay can do, seems to be included in a wasting of parts which are only dissipated, not destroyed, or in a change of sensible

properties, which Chemistry demonstrates to arise only from new combinations of the same ingredients. Annihilation is a word unknown to the chemist. Destruction is but a synonym for regeneration.

Not one of the least commendations of Chemistry to the individual intending to devote himself to the practice of our profession, is the strict and pure system of logic it engenders. In Chemistry mere hypothesis has no existence—every thing must be subjected to experiment—the re-agent and the crucible, the blow pipe and the test, are the weapons of arguments, and from them there is no appeal. The beautiful simplicity of its laws, admitting of no doubt or confusion, the certainty of its results, must enchain the reason of all who become introduced to them.

We find the entire universe composed of a certain number of elements, which elements combine in certain definite proportions to form bodies which we call compound; these compounds again combine according to the same law, and, however complex the body may be, how numerous soever its constituent particles, still it is marked by the same simplicity and beauty which distinguishes every variety of combination under the influence of chemical force. There is no uncertain arrangement of particles, but, however great the number of atoms of one element may be over those of another, only those combine which are required according to the great natural law of the atomic theory, to form the compound, all the others remaining free and uncombined. Synthesis and analysis, the one resolving a body into its constituents, the other reforming it from these same constituents, correcting and checking each other, are the disciplines with which Chemistry curbs the intellect of its votaries, and no exercise can so strongly teach the necessity of a rigid and accurate system of reasoning—not even geometry itself—as the constant supervision which the chemist must keep over his experiments, and the absolute exactness of the results which they must yield. In Chemistry, one's observations must not only be circumstantial, but faithful, and every thing we observe must be rigidly set down; a strict and accurate habit of observation is thus acquired, and the student soon learns, that in the science to which he devotes his attention, nothing is unimportant, nothing insignificant.

It was a happy thought of Glauber, to examine what every body else threw away, and by this examination of residue, some of the most important chemical elements have been discovered. Thus the Swedish chemist, Arfwedson, discovered Lithia, by observing an excess of weight in the sulphate, produced from a small portion of what he considered as Magnesia, present in the mineral he had just examined, and which he was about to throw away; the metals Selenium, Iridium and Osmium,

were discovered in a similar manner. Trifles, apparently the most insignificant, are often productive of the greatest events. In illustration of this, we may exemplify the discoveries of Galvanism and Iodine. The movements of the legs of a frog, recently dissected, lying near a Galvanic Battery, attracted the observation of the Italian physician, the mere accident (if we may use such a term) of the spasmodic motion of these limbs gave to his well-disciplined mind, the first germs of that grand discovery, the results of which, now pervade the entire globe. The decomposition of water, the fusion of the most refractory metals, the relief of paralyzed limbs, the electric light, whose brilliancy almost equals that of the sun, the transmission of a message, from one hemisphere to the other, with the rapidity of thought itself, are all due to the mere observation, by an old man, of the peculiar movements produced in the legs of a decapitated reptile, as it happened to lie upon his dissecting table.

Equally illustrative of the necessity of cultivating habits of observation, equally forcible in proving the paramount importance of not neglecting the merest trifle, is the history of the discovery of Iodine and its application to medicine. A soap boiler of Paris, one Mr. Courtois, remarks "that the residuum of his ley, when exhausted of the alkali for which he employs it, produces a corrosion of his copper-boiler, for which he cannot account. He puts it in the hands of a scientific Chemist for analysis, and the result is the discovery of one of the most singular and important chemical elements, viz: Iodine. The properties of this, being studied, are found to occur most appositely in illustration and support of a variety of new, curious and instructive views then gaining ground in Chemistry, and thus exercise a marked influence over the whole body of the science. Curiosity is excited; the origin of the new substance is traced to the sea plants, from whose ashes the principal ingredient of soap is obtained, and, ultimately to the sea-water itself. It is thence hunted through Nature, discovered in salt mines, and in springs, and pursued into all bodies which have a marine origin; among the rest, into sponge. A medical practitioner, Dr. Coindet, of Geneva, then calls to mind a reputed remedy for the cure of one of the most grievous and loathsome disorders to which the human species is subject, viz: Goitre, which was originally cured by the ashes of burnt sponge. Led by this indication, he tries the effect of Iodine in that complaint, and the result establishes the extraordinary fact, that this singular substance, taken as a medicine, acts with the utmost promptitude and energy in Goitre; dissipating the largest and most inveterate, in a short time, acting as a specific against that deformity." By attention to this simple fact of allowing nothing to pass unexamined, one of the most potent therapeutic



agents has been discovered ; and we may remark, that, without a knowledge of Chemistry, its powers would have remained for ever hid, and without that peculiar aptitude for regarding nothing as trifling, which chemistry alone gives, this invaluable addition to our therapeutic armory, would have passed away undiscovered, and "like the baseless fabric of a vision, have left not a wreck behind."

In the infancy of the science, its power of supplying new remedies was appreciated. The vaunts of Paracelsus, in the 16th century, of the powers of his chemical remedies and elixirs, backed by his many surprising cures, convinced all rational physicians that chemistry could furnish many excellent remedies unknown till that time, and many experiments began to be made by physicians and chemists desirous of discovering and describing new chemical remedies. In this way, Antimony and Mercury were introduced to the profession. The true use of chemistry, says Paracelsus, alluding to the search for the Philosopher's Stone, "is not to make gold, but to prepare medicines."

I have said, there can be no scientific practice of medicine without a true and correct knowledge of Physiology. The physician, who is no physiologist, is little better than the empiric. He may, indeed, practise the Art, but can never attain to the Science of his profession. Now the very basis of Physiology, the ground upon which it rests, the tree from which it grows, is chemistry, and without that, it is a mere vague and baseless dream of the imagination, leading to innumerable follies and errors. The mere knowledge of external forms and physical properties cannot satisfy the physiologist. He every day becomes more deeply impressed with the importance, the indispensable and paramount duty, of becoming intimately acquainted with the ultimate, the chemical composition and changes of organic bodies. "How," says Liebig, "how differently would the treatment of diseases be conducted, if we had perfectly clear notions of the processes of digestion, assimilation and excretion. Without just views of cause and effect, without a clear insight into the very essence of natural phenomena, without a solid physiological and chemical education, is it to be wondered at that men should defend the most absurd notions, as that of the doctrines of Hahnemann ;" the absurdities and infinitesimalities of Homœopathy, the crudities of Hydropathy, and the thousand *gaucheries* that bring the medical profession into odium and disrepute, should find disciples and defenders. "Without a profound knowledge of Chemistry and Physiology, physicians will obtain no light to guide them in the solution of their most important problems, the investigations of the laws of life, the vital processes, and the removal of disease from the organism." Without a knowledge of the chemical forces, the nature and effects of the

vital forces cannot be fathomed, and without a correct and due knowledge of the chemical agencies, the physician is as a pilot without a compass, a ship without a rudder.

Now, let us proceed and see in what manner an acquaintance with Chemistry may be directly useful to the physician. How, discarding all questions of physiology or science, in the abstract, it may be essential at the bed-side of the patient. The attention of the profession is now being daily directed to the treatment of a large class of diseases, formerly exceedingly obscure and deemed incurable—but which Chemistry has now elucidated and proved to be among the most remediable of all the ills which are daily brought under our notice. I allude to the large class of diseases known as diseases of the urinary organs—an unfortunate and misapplied name, however—for in very many cases these organs are not diseased at all. The proper name for this class should be, diseases manifesting themselves by symptoms referable to derangement of the urinary secretion. I fearlessly affirm that no practitioner, who is not a chemist, can either properly detect or treat this large class of maladies.

In the first place, he is ignorant in what manner to discover them, even should he be aware of them; but the great probability is, that his attention never having been directed to them, he will be unaware of their existence, and will treat the unfortunate patient for some disease that does not exist, and thus, either aggravate the original distemper, or introduce one less amenable to treatment. Let us never forget that the diagnosis and treatment of disease are simply matters of question and answer; we should interrogate every organ of the body, and that one which does not give the proper reply, is the one that needs our assistance. One example is better than a thousand precepts. When I first came to this city, one of my earliest patients was a gentleman, who had been pronounced dying of an inveterate phthisis. He had undergone every variety of treatment and mal-treatment, for two or three years, with no result; daily he became more emaciated and feeble, and seemed fast tottering to an early grave. He, as a mere matter of speculation, simply because I was a new physician, came to consult me, and told me he was in a hopeless consumption, and did not believe any chance remained for him. His appearance in truth was phthisical. He had cough, dyspnoea and night sweats. I asked questions of the various organs of his body: his lungs responded, they were sound; his heart said it was in a normal condition; his stomach, his liver, his spleen, all replied there was nothing the matter with them. There was clearly no consumption. But why, then, should this gentleman continue to waste and pine away? According to an invariable rule with me, in difficult and doubtful cases, I requested him to send me a specimen of his urine;

and then the mystery was solved. Its specific gravity was 1.032. Was it diabetes? My test answered no! On further examination, the cause of this enormous waste was found to be the passage of urea in excessive quantity. In every ounce of urine he passed 32 grains of solid matter, consisting chiefly of urea, one of the most highly nitrogenized constituents of the body. The cause once discovered, the remedy was easy; and I had the gratification, in a few months, of seeing this gentleman relieved from the horrors of a suspected consumption, being restored to health. Do not let me be misunderstood. I do not arrogate to myself any superior sagacity or skill. I simply called in chemistry to my aid in my search after disease, and she did not fail me, as, depend upon it, she will never refuse you, if you will diligently and earnestly ask her assistance.

In connection with this, let me quote a passage from the Hunterian oration of Dr. George Owen Rees, one of the chemical benefactors of medical science. Dr. Rees says: "The study of science increases the interest of the practitioner of medicine in every way. It assists him to analyze symptoms, to arrange and to eliminate them, and gives him a steadiness of purpose and a facility in arranging his ideas, which will be of vast service to him in many trying occasions. In order to show how closely this assertion accords with the fact, let me now, as an instance, direct your attention to the manner in which one who has followed chemistry as a favorite science, and has had his mind strongly imbued with the principles of chemical analysis, might be supposed to search for the cause producing hæmaturia, in some cases under his care, and thus simplify how his process of thought would accord with that which he would use in the chemical analysis of specimens of inorganic matter of simple constitution. The discharge of blood may be accounted for in many ways; it may come from any part of the urinary apparatus, and he looks to other symptoms in order to test the correctness of each of the forcible causes, as they severally present themselves to his mind. The chemist, having a mass of inorganic matter placed before him, goes through the same reasoning. It may consist of any one of a great many substances, but then these do not show the same re-actions when tested by re-agents, or, in other words, do not show the same symptoms. We will suppose he first applies heat to the mass, it remains unaltered; this fact at once excludes from his consideration every product of the animal and vegetable kingdom—one of which would have become either volatile or charred, and thus his task is greatly simplified. In the same way, in analyzing his case of hæmaturia, he would test by questions referring to calculus of the bladder as the cause; and on hearing of the absence of all such symptoms, he would at once simplify



matters by dismissing from his mind the consideration of malignant disease, and of calculus in the viscus, both of which would produce some of the symptoms of calculus—his questions have acted as his tests did on the inorganic matter. To recur to the latter. The chemist next boils the substance in water; it dissolves: here, again, having separated the organic kingdoms, he further separates from his consideration all matters from the inorganic kingdom which are insoluble in water, for the substance was soluble; so that the elimination of its real nature is going on apace. To turn again to our patient. What must be our second test? We ask questions, (our tests,) referring to the prostate. The examination *per rectum* shows it of natural size, and the age of the patient is under 40, so that we may fairly exclude the gland as the source of the hæmorrhage. The chemist, having the soluble substance in solution, now applies the carbonate of potash to a portion of it, and finds the substance is not precipitable, by which he is enabled to exclude all substances precipitable by the carbonates. This shows him he is not dealing with a metal or an earth, both of which would have been thrown down; and as heat showed the substance was neither volatile nor destructible, it can now be nothing but an alkali or alkaline salt. Side by side proceeds the medical reasoning. We have excluded the bladder and prostate as causes, and we now direct our test questions to the state of the kidneys. On doing so, we find there is pain in the loins, increased by exertion; that the hæmorrhage there tinges the whole urine; that the patient has occasional fits of vomiting. The previous symptoms or tests have now excluded the rest of the urinary apparatus, and we declare calculus of some kind in the kidney.

Now for the chemist again. He has ascertained that his solution contains an alkali; he adds tartaric acid to a portion of it, there is an immediate effervescence; and on adding the same test in excess, he observes, after a while, a deposit of bitartrate of potash. He now knows he has been operating on a mass of carbonate of potash, and his labor is ended.

To return again to the patient: we have determined he has calculus in the kidney, and we now look for symptoms to show its nature. Our questions acting still as tests, we ascertain he is of a gouty family, and that he often passes red sand in his urine; we conclude, therefore, that our case is one of uric acid in the kidney.

In this argument, we see clearly how closely allied to the interest of both patient and physician is a knowledge, and that not superficial, of chemistry. I do not say a good chemist is necessarily a good physician; any more than a good anatomist is a good surgeon; but I do say that a man is an infinitely better physician for being a good chemist, and

instances will occur daily and hourly in which he will find it so, and will look back with a vain regret, should he feel his deficiency.

We have now to consider another phase in the career of the physician. It must be remembered, and cannot be too strongly impressed upon the mind of any one intending to enter the ranks of the profession, that the physician will and must be the constant referee (for the public) in all that relates to science and physical phenomena. To him will be referred, for solution, all questions that bewilder the general mass. His opinion will always be required, and he will be the universal councillor ; and to be a perfect practitioner, his knowledge should be almost encyclopedic. However absurd it may seem to us, the success in life of the physician will frequently depend upon the answers he may give to questions that seem in no way to bear upon the profession he represents, and his skill and professional attainments will not unfrequently be judged of by his readiness and tact in affording solutions to the many vain, and, it may some times happen, irrelevant subjects which the public will consider it his duty to know. No science will give him this readiness, no single science will give him such a magazine of general knowledge as chemistry, which encloses within its arena the elements, and brings within its range the principles, of all sciences. It may be called the substratum, or foundation stone, of all physical science ; its illustrations are drawn from Botany, Geology, Astronomy, Natural History, &c. ; and the thorough chemist may be considered a graduate, if not an adept, in all the departments of human knowledge.

Let us now see how chemistry applies to Therapeutics. Let us ask the question, how any physician can write even a single prescription without a knowledge of chemistry ? The very elements of his science rest upon it—he cannot proceed a step without its assistance ; without it, he will be in constant danger of confusion ; of giving the most heterogeneous substances, and of producing the most singular combinations. Let us never forget that the most innocent substances, when combined chemically, produce the most poisonous compounds—that the ambient air which bathes our tissues, which pervades our entire system, without which we should perish, is composed of the same elements as the corrosive nitric acid—that the addition of one equivalent of chlorine more, changes the comparatively innocent calomel into the deadly corrosive sublimate, and that an inattention to the chemical properties of the metallic substances may transmute the most innocent into the most lethal compound ; but even if the prescriber should not poison his patient, he may so combine remedies as to render them inefficacious and inert, or productive of results different from those calculated on or required. Acids and alkalis may be given in the same mixture—substan-

ces which mutually decompose each other given together. We will suppose a physician, ignorant of chemistry, called to a case of hæmoptysis—he knows that one of his best astringents is sulphuric acid ; he is also aware that acetate of lead is one of the most potent styptics ; to make assurance doubly sure, he will join the two together, and the result will be the insoluble and inert sulphate of lead. He may desire to give an effervescing draught ; he will prescribe muriatic acid and carbonate of soda, the hapless patient will take a solution of common salt ; salts of iron will be prescribed with vegetable bitters containing tannin as their bases, and the result will be writing ink. Let it not be supposed that cases like these are purely hypothetical. I myself have seen mistakes as gross as any I have mentioned. It is true that any work on the *Materia Medica* has or had a long list of substances marked incompatible ; but it would be impossible for the memory of any living being, however gigantic, to retain it ; whereas, the knowledge of a few simple chemical principles will prove an effectual safe-guard against all such error.

But heavy as is the physician's responsibility in instances like this, a heavier still remains. Cases are unfortunately of occurrence where the physician is the direct arbiter of life and death, where his knowledge or his ignorance determines the question, where the hesitation of a few minutes may give the casting vote whose result is mortal ; where, as the priest of Holy Writ, "he stands between the living and the dead." I allude to cases of poisoning, either intentionally or accidentally. Here, indeed, the only resource of the physician is his knowledge of chemistry. What must be the feelings of such a man, when called to a patient, to whom, by some means, a poison has been administered, and who looks to the physician as the only human being in whom he can put his trust ? and he, the one who holds within his hands the destiny of the unhappy patient, is compelled to stand idly by, and curse the ignorance which has made him morally a homicide ! No time is there to refer to books—he vainly tries to recall something he has heard during his student life ; but alas ! nought remains but a dim and indistinct idea, and he wrings his hands in painful helplessness and sees his fellow man, his victim, expiring before his eyes.

Let us suppose an error has been made ; a patient has been given by mistake (and unfortunately it is not an uncommon one,) Oxalic acid for Epsom Salts. How shall he detect the difference ? How shall he relieve the unhappy sufferer ? A slight acquaintance with chemistry will tell him that the oxalate of lime is insoluble ; that any piece of chalk—nay, that a plastered wall—would be a safe-guard and an efficient antidote.



He may be called upon to testify in a court of justice ; on his fiat may depend the acquittal or conviction of a fellow being. To him may be confided the task of discovering the guilt or innocence of his fellow man. To him may be given the task of lifting the impenetrable veil, of removing the mask of guilt—of revealing the subtle poison, whose agency has snapped the secret springs of life. And how will he perform this task without a knowledge, aye, an intimate knowledge of that science, whose elements embrace the whole circle of his profession ? I might descant upon this subject for hours ; but time wanes, and I must pass to another branch of my discourse—the positive benefits which Chemistry has conferred on Medicine. I have only time to advert to a few, but some are as important and have been productive of as much saving of human life as the immortal discovery of Jenner.

The use of lemon juice and fresh vegetables in the treatment of scurvy and purpura is due to their supplying to the blood an element in which it was deficient, potash. We use preparations of iron in anæmia, because we know that the disease depends upon a deficiency of this metal in the blood.

We find, by chemical analysis, that a large proportion of the constituents of bone consist of the salt, phosphate of lime ; chemistry suggested its use in the disease called mollities ossium or rachitis, and in supplying bone callus after fracture, and the recommendation has been attended with benefit. We use cod-liver oil in phthisis, because being rich in carbon, it supplies the system with a material which is being constantly consumed by the oxygen of the air. In lead colic, where the system is saturated by the metal, we employ a substance, the iodide of potassium, which forms a soluble salt with the metal, and by which it is eliminated in the urine. We protect those who work in lead by advising them to use a sulphuric acid lemonade, by which it is converted into an insoluble salt, and is incapable of being absorbed, and thus from producing its deleterious effects. Instance might be multiplied upon instance of the direct application of chemistry even to the most practical part of medicine, and of its immense benefit, not only to the physician, but to the world.

It has been said that the man who makes two ears of corn grow where but one grew before, is a benefactor to his country ; then, surely, he who discovers a remedy by which the maladies of thousands are alleviated, or who, by the application of sanitary laws and regulations, prevents any of the thousand ills which afflict suffering mankind, deserves the same title. It is only in the application of chemistry to medicine, that the solution of these enigmas is to be found.

I trust I have said enough to impress upon your minds the necessity of making chemistry a paramount and principal portion of your studies. Believe me, I have not exaggerated its importance ; and you will never have occasion to regret, in your after career, the time spent in acquiring its principles.

It now only remains for me to inform you of the plan on which I shall endeavor to instruct you, and the course I shall pursue during the ensuing session. My object will be to make the entire lectures subservient to your wants as physicians ; and with that view, I shall not dwell at any length upon the imponderable agents, but commence at once with the practical portion of our subject. We shall examine in detail the gaseous constituents of our system, and dwell at some length upon the metalloids and metals which enter into our *Materia Medica* ; and although in your lectures on therapeutics, you will be taught in full the application of all the substances in the *Materia Medica*, yet I shall deem it my duty to consider these in their relations to medicine. Physiological chemistry, the basis of a rational system of practice, will receive a full and efficient share of attention. It is my purpose (your Professors of Practice and Surgery have kindly yielded to me the privilege) to include, in this session, a full course on the nature and treatment of diseases of the urinary organs, a class now occupying a station by themselves, and whose pathology has received a full elucidation from the combined labors of a Golding Bird, a Prout, and a Rees.

Previous to the conclusion of our term, it is my intention to devote a series of lectures to the consideration of a branch hitherto, in this country, somewhat neglected, but whose importance cannot be too highly estimated, viz : Forensic Medicine and Toxicology—or the means employed for the detection of poison after administration, with the modes of counteracting their deleterious influences.

Such is a comprehensive plan of the course I shall pursue ; and I can assure you, no labor shall be spared on my part to render you familiar with all the details of this branch of your profession. For this purpose, we have a Laboratory stored with all the most needful appliances, for the fullest course of chemical or physical investigation ; no expense has been spared to render it complete, even to the most minute particular ; and I may say with pride, that we, in the infancy of our Institution, may vie with the oldest and most venerable schools in this or any other country. This Laboratory will be open to all of you that wish to engage in the practical department of chemistry ; and it will be my pleasure, as well as my duty, to assist all who desire instruction in manipulative details. And now, in conclusion, let me say that I hope you will consider me but as a student like yourselves, a little

more advanced, and therefore more capable of assisting you in your studies ; and should, as is probable, anything escape from me during the lecture, which you may not readily understand, I shall expect you to question me afterwards, and trust you will not leave me until all is explained and thoroughly elucidated.

I must, for the present, bid you farewell, and hope that the ensuing five months may be to all of us a source of lasting as well as instructive acquaintance.

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ART. V. *Case of Aneurism of the Crural Artery: Ligature of the External Iliac* : by H. DARET, M. D. P.

Felix Lefebvre, of New Orleans, about thirty-six years of age, enjoying ordinarily good health, of a nervous temperament, called, in the month of March, 1842, to consult me in regard to a tumor which had made its appearance upon the anterior superior part of the right thigh. He attributed it to an exertion he had made some months before, to avoid a fall resulting from a false step.

The examination led to the discovery of an aneurism of the femoral artery, extending from the crural ring to three fingers' breadth below. Several means were tried to obtain resolution, and among others, compression, but without success. I subjected my patient to an examination by several of my *confrères*. Their opinions coincided with mine, namely, that there remained nothing more to try except the ligature of the external iliac. The patient was informed of this ; he consented without hesitation to the operation, which was fixed for June 19th, 1842.

On this day, assisted by Drs. Fortin, Landreaux, Guesnard, Lambert and Dupas, I performed the operation. I gave preference to the process of M. Velpeau. I arrived, without accident, upon the artery, at its passage upon the internal edge of the psoas, and the ligature was applied. Very little blood was lost. The patient, quietly held by my assistants, made no movements nor groans. No disquieting symptom manifested itself upon this side of the limb ; the reaction was slight. It appeared that all ought to progress without untoward accident, when, on June 23d, (four days after the operation) there passed by the course of the ligature quite a large quantity of blood. This hæmorrhage, without being very considerable, created much anxiety in our mind, and only ceased on the 27th, under the influence of styptics internally, and the constant application of ice to the wound. We attrib-



uted this accident to the section of one of the branches of the tegumentary artery, which had not given rise to sufficient hæmorrhage during the operation to render it necessary to tie it at the time.

From this date, the state of the patient left nothing to be desired. The ligature did not come away until August 3d, (45 days after the operation.) It is true that I had made a few very slight tractions to draw it out, and these only in the last days of this period. Mr. Lefebvre began to walk on September 6th, (the 80th day.) A year after he went off to his work. There remained at the place where the aneurism had existed only a small hard knot.

His health remained good until 1846 ; in which year he was attacked with nervous phenomena, which augmented in intensity and assumed the form of a species of angina pectoris. The paroxysms were, at first, separated by long intervals. About the end of 1848, (about six years after the ligature of the external iliac,) he had several attacks, one after the other. He suddenly died in a last fit, more intense and shorter than the preceding ones.

NEW ORLEANS, Jan. 1, 1857.

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ART. VI. *True Aneurism of the Crural Artery. Ligature by DR. MERCIER. Observations of DR. M. ESCOUBAS.*

All surgeons who have practised, upon the dead body, surgical operations, will agree with me that the one which is performed most easily, is the ligature of an artery. After some day's experience in a dead-house, a blood vessel can be readily found in three or four cuts with the bistoury. On the contrary, in the vivisection it frequently happens that unexpected difficulties render an operation long and difficult. In fact it is of the greatest importance not to wound the large veins or nerves, which are often in immediate contact with the artery sought for. The pulsations of the artery are not so constant and as sure a guide as would be supposed. It nearly always happens that the inhalations of chloroform place the patient in a state of semi-syncope, in which the contractions of the heart and the movements of the arteries are continued in such a manner that the finger, carried to the bottom of the wound, vainly seeks to recognize, by this sign, the direction which it is necessary to give the dissection. The blood which flows constantly in the incision which has been made, stains all the tissues of a color similar, and prevents the nerves, veins, arteries, etc., from being distinguished, the one from the other, as readily as upon the dead body. I have estab-

lished, then, a great difference as to the difficulty of placing a ligature around an artery in the living and the dead body.

I acknowledge that I was much surprised, the first time I assisted Dr. Mercier in placing a ligature upon the femoral artery, to see him perform it in accordance with the double precept: "*Cito et tuto.*" I have seen surgeons, certainly very skillful and experienced, occupy a much longer time in arriving at the same result.

The true aneurisms of the femoral artery are both rare and remarkable. An observation of an aneurism operated, upon by Dr. Mercier, presents so many features of interest that I deem it worth while reporting it with some detail.

Louis Flous, a native of France, who has resided in New Orleans for fourteen years, pursuing the occupation of knife-grinder, sharpening the saws for the butchers of Poydras Market, is forty-six years of age, of a constitution little shattered, of a scrofulo-nervous temperament, and is affected with varicose veins and fibrous rheumatism in the pelvic members. He has, upon the sides of the neck, below the lobule of the ear, numerous cicatrices of scrofulous tumors which had festered and been running during eleven successive years.

About fifteen months ago, he perceived the existence of an indolent tumor on the superior part of the middle third of the right thigh. It was without abnormal heat, without change of the color of the skin, of the size of a small hen-egg, and had developed itself without a known or appreciable cause. He believed it to be of the same nature as those he had formerly had upon his neck, and, as it was neither inconvenient, nor painful, he did not consider it of a serious nature. He continued, without any precaution, his painful labor. He consulted an ignorant apothecary, who counseled him to use but common salve and to apply Raspail's *Eau sédative*. But the tumor, as may be well supposed, did not yield to those means that impertinent ignorance alone could have advised. It acquired every day a larger development, and, in fine, increased in volume to such a degree, that its presence became very troublesome; it finally produced weakness, obstruction, with intermittent pains and prickings of short duration, in the whole extent of the limb.

Not being able to continue his ordinary work, and justly alarmed by the rapid increase of this tumor, to which he had at first given but very little attention, Flous determined to call for my assistance, on August 26th, 1856.

At this period, the tumor equaled in size the head of an infant at full term. It had a spherical form, giving pulsations isochronous with those of the heart, and which compression of the femoral artery against the

horizontal branch of the pubis caused to cease completely. The ear, applied to the tumor, perceived a *bruit de soufflet* sufficiently strong at times to resemble snoring.

The indications were sufficiently clear, and I did not hesitate to state that it was a true aneurism of the crural artery. Measured circularly over the most prominent part of the tumor, the thigh offered an extent of twenty-one inches, whilst the thigh of the opposite side measured, at the same height, only seventeen inches.

The rapid development of this tumor, particularly latterly, ought to have excited fears. I proposed an operation, which was readily accepted. The patient gave preference to Dr. Mercier, and it was resolved, by common consent, that it should be performed on September 2d, at ten o'clock in the morning.

Enlightened by some practical trials, and reasoning upon an exact anatomical knowledge of the region, Dr. Mercier resolved to place the ligature upon the femoral artery about an inch and a half below the profunda.

The mode of operation having been determined upon, and everything being prepared, I placed in the bottom of a handkerchief, folded in the shape of a horn, a little lint saturated with about thirty drops of chloroform. This horn was perfectly adapted to the mouth and nose of the patient. In less than a minute, the patient experienced the convulsive movements which ordinarily characterize the period of excitation, and, soon after, he was in a complete state of relaxation. Dr. Mercier commenced the operation immediately. Armed with a curved bistoury, he made an incision about three inches in length from the superior third of the thigh, along the course of the femoral artery. The skin being thus divided, a director was passed under the aponeurosis, which was cut open longitudinally in all the extent of the wound. The sartorius muscle being drawn outwards, the sheath of the vessels was thus brought in view, when it was extensively opened with proper precautions. The artery was separated with the greatest care from the parts to which it was united, and, most remarkably and fortunately to say, there was not the least oozing of blood to cause the operator any inconvenience. He then carried around the artery, by means of Deschamp's needle, modified by himself, and with all the necessary precautions, a ligature of three threads, which he drew together with sufficient force to interrupt all pulsation in the tumor. The edges of the wound were drawn together as exactly as possible with strips of adhesive plaster, with the purpose of obtaining union by first intention as far as practicable. After the dressing was completed, we surrounded the entire member with warm sand in order to keep up an uniform temperature.



The patient bore, without difficulty, the operation, which did not present the least complication.

Dr. Mercier was assisted by Dr. Alfred Mercier, his brother, and Dr. Chastant, and by Mr. Capdevielle, a medical student.

The day after the operation, September 3d, the condition of the patient was most satisfactory. The heat of the limb and foot was maintained at a satisfactory temperature. The sleep was sufficiently good, and there was no fever. His condition remained the same to the 6th, when the dressing was changed. The wound was entirely united, that is to say, in its entire length, except where the ligature passed out. There was, at no time, any febrile reaction. The patient was allowed soup on the day after the operation. Claret and water were given him as a beverage.

The patient, put upon a proper diet, readily began to convalesce. Nothing worth noticing occurred until the nineteenth day after the operation, when the ligature came off without any effort or any loss of blood.

Louis Flous has since resumed his ordinary occupation. Having got rid of the pains caused by his aneurism in consequence of its weight, and the pressure it exercised upon the large nerves of the thigh, his general health has considerably improved, and to-day, November 24th, his aneurismal tumor, reduced to the size of an ordinary orange, does not cause him the least inconvenience.

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**ART. VII.** *Aneurism of the Femoral Artery. Ligature of the External Iliac by DR. MERCIER. Observations of DR. ALFRED MERCIER.*

Michael Moran, a native of Ireland, aged thirty years, has been living in New Orleans fourteen years. His constitution is rather strong, his temperament sanguineous. He has always enjoyed good health. He was employed in a hardware store, when, about eighteen months ago, in attempting to raise a box which weighed nearly one hundred and fifty pounds, he let it fall upon his right groin. He felt immediately afterwards pain in that region; but, warmed up by his work, he gave it but little attention. It was only some days later that he perceived that a tumor of the size of a hazel-nut existed in the abdomino-crural fold. Apart from this, the skin had not been scratched, and there was no appearance of ecchymosis.

Moran continued to work, although the tumor made some progress. However, at the end of two months, the entire inferior extremity of the right side having become swollen, he was compelled to stop working. He then consulted a physician. The latter, according to Moran's ac-

count, ordered frictions with spirits of camphor, and bandaged the leg. The patient was confined to his room for three weeks. In accordance with the advice of his physician, he reapplied the bandage himself, and continued to do so for three months. Seeing that, far from diminishing, the tumor continued to develop itself, he consulted again the same physician, who, this time, prescribed softening poultices to the groin. These producing no good effect, a blister was applied, which was repeated at the end of four days.

Moran was still able to go to work at times ; but the pain he now experienced throughout the entire limb, but principally at the knee, forced him to stop.

On June the 24th, he determined to enter the Charity Hospital, where his cure was attempted by means of compression with the double-cushioned tourniquet. The patient asserts that he could not endure it more than half an hour—the pain became so intolerable that he was compelled to relax the screw.

After having remained ten weeks in the Charity Hospital, Moran left it to put himself in charge of Dr. Mercier, whose client he had formerly been. The man's condition was generally favorable, and he appeared firmly resolved to undergo an operation if it were deemed necessary.

It could be observed, in his case, that a tumor existed immediately below the fold of the right groin, the circumference of which, at its basis, measured sixteen inches. Following the sinuous line which the prominence of the tumor formed in passing from the the crural arch and descending in the direction of the femoral axis, it could be seen that the tumor presented an extent of seven inches and a half. The distance from one side of the basis to the other side, in a transverse direction, and passing over the most prominent part of the tumor, was six and a half inches. The summit was elevated thirty-one lines above the anterior superior spine of the ilium. Quite a number of projecting veins furrowed the sloping sides of the tumor. A net-work of little red vessels was depicted on the top. The tumor was animated with an expansive movement appreciable to the sight. Viewing the surface at the moment when it was dilated, and then when it was relaxed, it could be seen that there was between the two extremes an interval of two lines.

If the hand were placed on the tumor, it was strongly repelled by the expansion which the whole mass underwent. At the same time a harsh *frémissement* was manifested by regular jerks isochronous with the pulsations of the radical artery. Passing the hand over the region from the basis to the top, a sensation was experienced of a thick and resisting wall, extending from the re-union of the two inferior thirds with the

superior third of the eminence formed by the tumor. At this limit the tissues became soft and depressible, and it was precisely here that the *frémissement*, of which we have just spoken, offered its maximum intensity. It was evident that, at this point, the distance between the exploring finger and the liquid which repulsed it was very little. So far as the appreciation of the touch could be relied on, it appeared that the skin, now the only barrier to the outpouring of the contents of the tumor, had lost something of its normal thickness. Above all, it was at this point that the tumor was overrun by little red, flat vessels like those which are observed on the inferior extremities of some women who have had children. Above this softened portion was encountered a hard segment moving itself easily between the skin and the liquid, giving to the fingers exactly the sensation of the pan of the knee, when, in a reclining position, it is made to play in the femoral pulley.

One would readily believe that the basis of the tumor prolonged itself superiorly even beyond the ligament of Fallopius. In fact, the tissues, elevated and thickened even to three fingers' breadth above the femoral arch, appeared to make only one with the tumor. But after having examined with care this sort of appendix, Dr. Mercier was convinced that it was due to the hypertrophy and gathering together of the ganglions which, in the normal state, surround the inferior third of the external iliac artery. He farther established that, in compressing this vessel with a single finger, and without much force, behind the ileo-pectineal eminence, the pulsations of the tumor could be easily suppressed; that which would not have occurred, if, at this point, the artery had been aneurismal. In fact, if this mass, which was elevated above the crural arch, had been an aneurismal sac appertaining to the external iliac, the end of the index could not have embraced its entire calibre; the blood would have flowed and the pulsations of the tumor continued to have been felt. To omit nothing, we will say that the ear, applied over the tumor, perceived a *bruit de râpe* like that which accompanies insufficiency of the aortic valves, except that it was more immediate and more voluminous.

The thigh of the affected side is manifestly larger. Its circumference measured about the middle and compared with the left thigh, gave a difference of two inches. The two abdominal members were furrowed with varicose veins, but much more decidedly on the right. The pedal and posterior tibial arteries no longer pulsated; the same with the popliteal. The analogous vessels of the healthy extremity gave perfectly distinct pulsations. The temperature of the affected limb was sensibly superior to that of the opposite side.



From all the circumstances just enumerated, Dr. M. concluded that Moran was affected with an aneurism of the crural artery, which had originated in the falling of a box upon the right groin.

Convinced that, in the actual state of things, compression would be completely useless, and that the time was not distant when the sanguineous stream would open an issue through the walls of the cyst, he believed that the only means of cure which remained consisted in the ligature of the external iliac. The patient, upon whom it would be practised, was a young man, of good constitution, an old client of Dr. Mercier, in whom he had the greatest confidence ; he was firmly determined, and he demanded, with importunity, that as early a day as possible should be fixed for the operation.

There are some aneurisms (*vide* Vidal de Cassis and Nélaton) which, growing from the femoral artery, extend upwards under Poupart's ligament, and, in some manner, are divided into two lobes, the prominence of one of which shows itself at the superior and interior part of the thigh, and the other raises up the abdominal integuments. From this may be reckoned the doubts which may arise in the mind of the operator. In fact, will he be able to place his ligature on a place sufficiently far from the origin of the artery, and on the other side of the point where the artery has begun to be diseased ? Will he not find himself obliged to tie the common iliac, as happened to Valentine Mott ? Such are the difficulties of the diagnosis and of the manual operation. Now, is there anything sinister to be apprehended with Moran ? No ; here the part of the tumor which was observed above the ligament of Fallopius was uniformly hard, compact, and was not subjected to an alternate movement of expansion and depression.

We have already stated the other considerations which could be invoked to establish that this solid mass was formed by lymphatic glands. In addition, as the femoral artery was not organically affected, the lesion that a traumatic cause has determined, ought to be limited, and that consequently a ligature could be placed around the external iliac at a selected point.

Moran presented a still farther favorable condition for the operation : he pulsations of the pedal, posterior, tibial and popliteal arteries were no longer to be observed upon the affected limb. The collateral circulation was then already established, and gangrene of the extremity was not to be feared.

Could it be doubted that the tumor observed on Moran was an aneurism of the femoral artery ? The annals of our science prove that there is no surgical malady which has given rise to more frequent errors. This aneurism has been taken for other liquid or solid tumors,

and, reciprocally, these latter have been taken for aneurisms. But in the particular case which occupied us, the diagnostic elements appeared too well characterized to allow a like mistake. Immediate formation and rapid development of the cyst after the application of a traumatic cause; pulsations isochronous with the pulse; movements of expansion and relaxation; *bruit de râpe*, immobility and silence of the tumor when the external iliac was compressed; obliteration of the pedal, posterior, tibial and popliteal arteries: such were the positive phenomena which first presented themselves to our observation. On the other hand, excepting the hypertrophied ganglions which were encountered above Poupart's ligament, the surrounding parts were not altered; no inflammation of the cellular tissue, little engorgement and no œdema. Moran offers a general condition very satisfactory; nothing in him of a nature to excite suspicion of the existence of any diathesis; nothing indicating that he has been exhausted by extensive suppuration.

The operation, having been fixed for the 9th of September, was performed in one of the rooms of the Circus street Hospital, and in presence of Drs. Bennet Dowler, E. D. Fenner, Canter, Escoubas, and, Alfred Mercier. Happy to seize the occasion which was offered them of deriving instruction at the school of example and experience, a large number of medical students, among whom were MM. Capdevielle, Percy, Huard and Halloway, surrounded the operator.

The patient having been placed under the influence of chloroform by Professor E. D. Fenner, an incision was made two fingers' breadth above the crural arch and almost parallel with the fold of the groin. The muscles and fascia transversalis having been divided and the peritoneum drawn up to the left, Dr. Mercier endeavored to reach the artery directly. But encountering then an obstacle in the ganglionic mass to which allusion has been made, he ordered an assistant (Dr. Alfred Mercier) to introduce the index finger into the wound, and to push down towards the bladder said ganglionic mass. This having been done, the artery was soon laid bare and elevated by the aid of Deschamp's needle. The vessel presented the ordinary calibre, and appeared perfectly healthy. The ligature being placed, the tumor no longer offered the least pulsation. After the operation, the limb did not sensibly vary in its temperature. At 6 o'clock in the evening, the patient had vomited, which was attributed to the chloroform. He complained of pain in no place except at the incision. His pulse was seventy-six. Lemonade with a little brandy was given him to drink.

Sept. 10th, 8 o'clock A. M.—The night has been passed quite well, nevertheless the patient has awaked quite often. Thirst; pulse 78.

About 3 o'clock P. M., he vomited again; at 9 o'clock, the pulse was at 82. The patient was tranquil, complaining only of slight pain at the epigastrium. The tumor was visibly depressed. The wound appeared disposed to close by the first intention; there was a slight running only where the ligature passed out.

Sept. 11th.—Irregular sleep during the night; frequent and painful belching. The pain which had manifested itself around the wound had extended to the umbilicus; it was increased on pressure; the face was natural, except a slight expression of prostration. There was some nausea, but no vomiting. The tongue was covered with a thick yellow coating. The thirst persisted. The urine passed well; no faecal evacuations since the operation. The pulse was 80; the pain which had been felt throughout the limb, but more especially at the knee, before the operation, had disappeared. The patient took a few tablespoonfuls of chicken broth.

Sept. 12th.—The abdomen was painful over a still greater extent. The patient complained also of a pain which, passing from the left clavicle, ascended to the middle part of the neck. The tongue remains coated with yellow. The nausea has not reëcurred. The limb corresponding to the artery tied preserved its temperature and sensibility. The patient looked a little depressed. Twelve grains of calomel and two grains of opium, in twelve powders, were prescribed to be taken during the day, one every hour; a sedative liniment of laudanum, chloroform and camphorated oil was also added.

Sept. 13th.—Amelioration of the symptoms which had excited fears of peritonitis. Pulse fallen to 72. Beef tea.

Sept. 14th.—The better symptoms are farther developed. Boiled milk.

Sept. 15th.—No more pain about the wound. The pulse is 68. No suppuration except at the point where the ligature passes. The tumor is stationary.

Sept. 17th.—All the functions of the patient are well performed.

Sept. 22d.—The ligature came away last night; a little less than thirteen days after the operation. The general condition of the patient leaves nothing to be desired. The little swelling which existed around the tumor has completely disappeared. Several large lymphatic glands can be felt rolling under the finger; they are those which, united in a compact mass, formed a sort of segment which covered the summit of the aneurismal cyst.

Sept. 29th.—The patient got up. A little pus still oozes from the wound, which is reduced to an orifice hardly large enough to allow the penetration with a stylet.



On the first day of November the wound was perfectly healed up, and Moran found himself strong enough to resume his ordinary work.

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#### ADDENDUM.

[The preceding cases, (Articles VI and VII,) so lucidly reported by Drs. Alfred Mercier and Escoubas, are greatly enhanced in value by the following anatomical, pathological and surgical commentary by the distinguished operator himself, whose many great surgical triumphs reflect credit upon New Orleans, his native city, and entitle him to the gratitude of his compatriots and *confrères*.—*Ed. N. O. Med. and Surg. Jour.*]

The two cases of True Aneurism of the femoral artery, which we have now laid before you, and for the details of which we are indebted to the obliging assistance of Drs. M. Escoubas and Alfred Mercier, offer more than one interesting feature, to which I beg leave to call your attention.

In the case of Flous, the malady develops itself without its origin being traceable to any appreciable cause. It is true that the patient has suffered from a scrofulous affection for many years; that his legs are now furrowed with varicose veins, and that his constitution is rather shattered; but there is no sign in him which betokens an aneurismal diathesis. The pulsations of the heart and of the radial, cubital, temporal and femoral arteries, on the healthy side, offer nothing abnormal either in their rhythm or their beating; in fine, the disease had developed itself towards the inferior portion of the middle third of the thigh, low enough to permit the throwing of a ligature around the artery one inch and a half below the origin of the profunda, that is to say, at the very point where the femoral artery is most seldom found to be affected with aneurism.

In the case of Moran, on the contrary, the nature of the cause is very well known; one can point out with accuracy the time when the latter began to operate; it was a heavy mass, weighing upwards of one hundred pounds, which fell upon the inguinal region. The very point where the wounding body had its effect became and remained painful; and from it originated a tumor, the progress and symptoms of which left not the least doubt about its nature and etiology. One of the most remarkable features of this aneurism is the fact of its having been the result of the action of a wounding body, which did not even scratch the skin, and seemed not to have, in any manner, impaired the subjacent organs.

In the case of both our patients, the malady has pursued its usual course; and when they offered themselves to my observation, they pre-

sented a series of symptoms which precluded all possibility of a mistake, viz: development, on the course of an artery, of a tumor exhibiting movements of expansion and relaxation, and beatings isochronous with the pulsations of the arteries and the contractions of the heart; total discontinuance of any movement or of any noise in the tumor, when compression was methodically established, above said tumor, upon the artery which was supposed to be effected; in fine, the perception of a *bruit de râpe* or *de soufflet* by the means of the ear applied to the aneurismal sac.

Considered in an abstract manner, the prognosis was as alarming in the case of Flous as in that of Moran; both were affected with an aneurism of a large sized artery; the malady had already developed itself to such a degree as not to admit any hope for a spontaneous cure. Left to themselves, without the interposition of art, both were doomed to an early grave. But, the hand of the surgeon intervening, Flous would be placed in a comparatively less dangerous position. The accurate knowledge of the anatomy of the diseased region gave sufficient proof that a ligature could be passed around the femoral artery one inch and a half below the origin of the profunda. Hence such means of nutrition being left to the thigh, and the collateral circulation being well established, there was no fear to be entertained that gangrene would supervene in the lower part of the limb.

In the case of Moran, the tumor had begun to develop itself above the origin of the profunda; besides, it seemed to stretch inside above Poupart's ligament in the same direction as the muscle psoas iliac. Was the ligature of the external iliac artery to be tried first? or was the taking up of the common iliac to be resorted to at the onset, and by this step deprive the limb of the means of nutrition afforded by the posterior branch of that large artery? I have already put forth the motives by which we were induced, after a mature examination, to resolve, without hesitation, on the ligature of the external iliac. Next we asked ourselves whether those aneurisms with two lobes, one of which is situated above and the other below the femoral arch, quoted by Vidal de Cassis, Nélaton and Valentine Mott, were not merely aneurisms situated at the superior portion of the crural artery and covered, at their summit, with a mass of enlarged lymphatic glands protruding below the ligament of Fallopius, and assuming the shape of an aneurismal lobe on the edge of the muscle psoas iliac, along the course of the external iliac artery? I am not conversant enough with all the details of the observations of Vidal de Cassis, Nélaton and Valentine Mott; I merely bring forth what is a doubt in my mind.

The only curative mode in the two cases under consideration, that could be resorted to, was to pass a ligature around the artery between the aneurismal tumor and the heart. The want of pulsations in the pedal, posterior, tibial and popliteal arteries, and the discontinuance of all kind of movement in the tumors after the ligature had been sufficiently established, were a most satisfactory indication that the return of the blood into the tumor, through the collateral arterial branches, was not to be apprehended.

Was it necessary, in the case of Flous, at least, after the ligature had been completed, to extirpate the tumor by the means of a dissection, the least inconvenience of which would have been of a very long duration? I unhesitatingly say, no—notwithstanding the fine success which it has been the good luck of one of our colleagues to obtain in a similar circumstance. This process, proposed by Bertrandi, in the latter part of the last century, is pregnant with dangers and inconveniences so palpable that it is not even necessary to discuss them.

May I be allowed to recall to your memory a most highly important truth, which I have already more than once marked out for the consideration of the members of our profession? I allude to the truly wonderful facility with which wounds are cured in this city, whether they are the mere result of accident, or proceed from the working of the physician's hand. This verdict of one of our *confrères*, who has departed this life, is certainly bound to become familiar among the people, viz: that a capital surgical operation, performed by even a second-class surgeon in New Orleans, has ten times as many chances to terminate successfully as a similar operation has when performed by the most celebrated surgeons in England, France, or Germany. The climate of Louisiana is, in that respect, inferior to no other, not excepting that of Egypt. Are we to conclude, from this datum, that all the seasons of the year are equally favorable, at New Orleans, to the successful result of surgical operations? My personal experience seems to prove the contrary. During sixteen years that I have been devoting the greater part of my time to the study and practice of surgery, in this city, contrary to the opinion universally entertained in Europe, that the spring and the fall are the two seasons most favorable to the successful termination of surgical operations, it seems to me that I have been led, by my own observation, to believe that the months in which the thermometer and the barometer show the least variations in the state of the atmosphere—that is to say, June, July, August, September, and sometimes October—offer propitious conditions which the others do not possess.

The subjoined table, showing the atmospheric condition of New Orleans, as per the thermometer and barometer, from the second to the



twenty-third day of September, 1856, will be the proof that the proposition I have just now put forth is not without foundation, as far at least as the two operations which I have performed upon Flous and Moran are concerned.

THERMOMETER.				BAROMETER.		
1856.	8 o'clk A.M.	2 o'clk P.M.	8 o'clk P.M.	8 o'clk A. M.	2 o'clk P. M.	8 o'clk P. M.
Sept. 2	84 deg.	85 deg.	84 deg.	30 deg.	29.98 deg.	30 deg.
3	85	92	84	30	29.95	30
4	84	92	83½	30	30	30
5	86	88	82	30	30	30
6	84	90	83	30.05	30	30
7	82	88	82	30.05	30.05	30.05
8	83	89	83	30.07	30	30
9	83	89	84	30	30	30
10	83	86½	83	30	30	30
11	82	90½	83	30	29.95	29.91
12	83	86	82	29.90	29.85	29.90
13	80	88	80	29.90	29.85	29.85
14	83	90	85	29.93	29.85	29.88
15	81½	89½	84	29.97	29.98	29.95
16	84	87	82	29.98	29.95	29.98
17	83½	90	81	30	29.95	29.95
18	82	86	81	29.95	29.93	29.95
19	80½	84½	80	29.95	29.93	29.95
20	81	86	82	29.96	29.90	29.95
21	80	83	76	29.95	29.90	29.90
22	67	73	71	29.88	29.83	29.82
23	66	72	66½	29.95	29.90	29.95

V

ART. VIII. *Fragmentary Notes on Pathological Anatomy.* (Continued from page 312.) By BENNET DOWLER, M. D.

*Historical Note.* The venerated and patriotic Dr. Rush, whose influence greatly swayed the opinions of his medical compatriots, published in the last edition of his *Inquiries*, in 1809, four years before his much regretted death, the following anatomical summary, as having afforded him satisfactory data for treating yellow fever successfully.

The post-mortem examinations made by Dr. Mitchell, of Virginia, which afforded Dr. Rush "a clue" to practice, amounted in all to five yellow fever subjects. These examinations, and the reports upon them, transmitted to Governor Colden, contain so many internal marks of imperfection and error, that it is, at the present day, altogether surprising the great teacher of the Theory and Practice of Medicine, in the University of Pennsylvania, should have based a theory upon them. But it must be remembered that, in Dr. Rush's day, neither physiology nor pathological anatomy was well understood.

These autopsies of yellow fever subjects were probably the first ever made in North America, and as the lesions assumed were almost exclusively post-mortem alterations, (which, however, will not be specially indicated at present,) it may be proper to mention the chief points in their history.

Dr. Mitchell reports that, in his five autopsies, the caul had totally disappeared! One subject was kept "*two or three days*" before examination! He opened two in the spring of 1737, two February the 13th and 14th, 1741, and in 1742 one more.

The dissection, which Dr. Mitchell made on the 14th of February, (a very unlikely month for yellow fever,) is the only one in which any details of consequence are given. The subject was a negress, aged 40, that belonged to Richard Chichester. The head was not opened. "The fat was very yellow; no omentum; the lungs, instead of being collapsed, were inflated as in inspiration. They were all over full of black or livid spots. On these spots were to be seen small vesicles or blisters, like those of an erysipelas or gangrene containing a yellow humor. The blood vessels, in general, seemed empty of blood, even the vena cava and its branches; but the vena portarium was full and distended as usual. The blood seemed *collected* in the *viscera*; for, on cutting the lungs, or sound liver or spleen, they bled freely. The liver turgid and plump on the outside, but on its concave surface two-thirds of it were of a deep black color, and around the gall-bladder it seemed to be mortified and corrupted; the gall-bladder appeared outwardly of a deep yellow, but within was full of black, ropy, coagulated atrabilis, which sort of substance obstructed the pori bilarii and ductus choledochus; I doubted if it were bile, although it would stain a knife or probe a yellow color, which, with its ropy consistence, seemed more peculiar to a bilious humor. The stomach was inflamed; it contained a quantity of bile of the same consistence, but of a blacker color than that which was found in the gall-bladder. The duodenum was lined on its inside, near the gall-bladder, with a viscid, ropy bile, like that which has been described," &c.

This account of the bile in this slave served, in a great degree, as the basis of Dr. Rush's pathology and therapeutics in the great epidemic at Philadelphia. "I transcribe the account," says he, "with great pleasure, inasmuch as it was a part of that *clue* which led me to adopt one of the remedies on which much of the success of my practice depended."

Had Dr. Rush practised dissections himself, he might have found out that it does not, in many cases, require an entire day, not to mention "two or three days," to produce a "black color around the gall-bladder,"

as the bile soon after death begins, in many cases, to exude, especially the thinner portion, which penetrates the adjacent tissues; exosmotic currents, or capillary attraction and even gravitation, produce extensive discolorations. Dr. Mitchell, from this discoloration, concludes that the liver, on a part of its concave surface, "*seemed mortified and corrupted.*" His supposition that the bile ducts were impervious, or that the bile could not pass into the duodenum, is plainly contradicted by another statement which he makes, showing that this organ, as well as the stomach, contained much bile.

The "inflation and vesicles" of the lungs were most probably altogether due to post-mortem gaseous distention; "black spots" are natural. "The cava and its branches were empty," from exosmotic or gravitative action; "the gall-bladder and concave surface of the liver seemed mortified"—that is, discolored with black bile, &c.

The illusory appearances found in dead bodies, one or two days after death, have not been always truly apprehended by pathological anatomists of the present day, some of whom make and report post-mortem examinations without so much as indicating either the season of the year, or the period intervening between the decease and the dissection. The learned Professor Cruviellhier, one of the most able among living authors, in his great work (in folio) on Pathological Anatomy, from *livraison* 1 to 19, for example, among 113 dissections which afforded the materials or models for his colored plates, mentions the periods at which he opened these cadavera in only 14 subjects—one had been dead 36, one 32, one 30, one 28, three 24, two 18 hours, &c., averaging more than 21 hours; while, in regard to the remaining 99, no mention is made as to the time which elapsed between the decease and the post-mortem examination. Such omissions, whether in the hot or cold season, throw doubts upon many lesions. Color, consistence, vascularity, infiltration, effusion, and so forth, may be so blendid with morbid and physical influences as to be little reliable or distinguishable for pathological purposes. When a body has been dead one or two days, in hot weather, or in a hot room, it will often happen that even the muscles and, consequently, other organs, will have been softened, and yet, under such circumstances, how often grave conclusions are drawn as to morbid softening of the spleen, stomach, heart, lungs, brain, &c.!

*Serous Effusions.*—*Medico-legal Case.* Before death in general dropsy, particularly in anasarca, the serosity in the cellular tissue gravitates from side to side with considerable rapidity, according to the position of the patient. There is reason to think that during the agony, and very soon after death, in some subjects, serous effusions, derived from the blood, take place into the cavities, particularly into the ven-



tricles of the brain, in the subarachnoidal tissue, and upon the periphery of the brain in the arachnoidal sack. The abnormal quantity of intercranial serum found in many subjects, even in the victims of consumption, probably takes place in the agony or immediately after death, as these effusions, which sometimes approximate serous apoplexy, had not been indicated by the usual cerebral symptoms during the disease.

If the heart, stomach, bowels, &c., be fixed to the faucet of a hydrant and the water, under a moderate pressure, be turned into these hollow organs, their walls become not only distended, but greatly thickened—that is, the water, by mere mechanical pressure short of rupturing the tissues, infiltrates them, resembling dropsical and inflammatory infiltrations and thickenings. The laws of exosmosis afford a plausible explanation of these effusions.

Inter-cranial effusions of serosity, in relation to forensic medicine, are of high import to the well being of society—that is, the ends of public justice. Physicians, otherwise able and skillful, who have neither practised post-mortem examinations nor studied physiology with attention, are liable to fall into errors in this regard. Thus, in an account of a trial for murder, as reported in the New Orleans newspapers, without contradiction, the medical witnesses who made the post-mortem examination, at an inquest in the case of a man who died an hour after having been beaten with a club, testified that “there was about a spoonful of water on the brain, which was otherwise healthy; that this watery effusion could not have been produced so soon after the blow; that the wounds on the head were not sufficient to have produced death in a healthy subject, and that if the blow had produced the lesion, (watery effusion) there would probably have been extravasation of blood.” Now, “a spoonful of water on the brain,” so far from being “a lesion” due to chronic disease of the brain, as was supposed in this case, is far below the average quantity found in the normal condition of that organ.

From numerous observations, I estimate, without having actually ascertained, the average quantity of water found in the crania of individuals, whether dying of diseases having their special or primary seat in the abdomen, chest, or brain, at from two ounces to a quarter of a pound, although, in some rare instances, particularly in cholera, it does not, perhaps, exceed one or two spoonfuls. The normal amount, independent of disease, Messrs. Todd and Bowman say, ranges from two to ten ounces. (*Phys. Anat.* 231.) Professor Todd says that “an obvious mechanical use of this fluid is to protect the nervous centres with which it lies in immediate contact. By the interposition of a liquid medium between the nervous mass and the wall of the cavity in which it is placed, provision is made against a too ready conduction of vibra-

tions from the one to the other. The nervous mass floats in the midst of this fluid. The sudden removal of this fluid brings on fainting and even death, &c"—(*Anat. Brain*, 54-5, *Lond.* 1845.)

"The flow of serum, or of a colorless liquid, from the ear, or even from the nose, is one of the most important signs of fracture at the base of the brain. The generally received opinion now is, that it comes from [is] the cerebro-spinal liquid; its chemical analysis is the same. Where the anatomical lesions have been minutely noted, they are found to be such as could permit the cephalo-rachidian liquid to escape. When the lesions are produced in the dead body, the cephalo-rachidian liquid can be seen to leak out."—(*M. Nélaton's Lecture*, by Dr. W. F. Atlee, 324.)

*Post-mortem Hæmorrhage simulating Meningeal or Capillary Apoplexy, with a Remarkable Case illustrating its Medico-legal Import.*—1851, Sept. 12, 6¼ p. m. I was summoned by the Coroner of the Parish of Orleans to make a post-mortem examination in the case of P. M., born in Ireland, aged 42, resident in New Orleans 16 years, laborer; died on New Levee street. Examination before the Coroner and Jury of Inquest: Body warm, of good physical conformation, well proportioned and muscular, free from rigidity; contraction of the muscles on percussion, feeble.

Upon the left cheek there was a trifling abrasion of the scarf skin as large as a dime; a contusion, with ecchymosis of the skin as large as a dollar, was found over the centre of the left parietal bone; there was a linear but partial division of the skin in the site of the contusion about an inch long; the contusion and ecchymosis scarcely extended to the inner surface of the scalp; the pericranium was neither detached from the skull, nor otherwise changed; the part contused but little swollen or infiltrated with blood; behind the mastoid muscle, on the right side near the spine, in front of the third cervical vertebra, an irregular ecchymosis, or rather a slight effusion of blood, large as half a dollar, was found, without, however, any corresponding external injury of the skin or intervening tissues. The subject bled considerably from incisions made in the dissection. The skull and dura mater uninjured; the arachnoidal sack enclosed about four ounces of blood, which formed a layer like a cap spread over both hemispheres, being thickest upon the convexity of the anterior lobes, particularly on the right side; the effusion also enveloped the cerebellum and medulla oblongata; blood was extravasated in the ventricles. The blood was chiefly fluid, but was at several places beginning to coagulate. No rupture or other injury of the cerebral membranes was found. The pia mater was loaded with blood. The substance of the entire brain was

natural in color and consistence, being free from laceration, ecchymosis, and hæmorrhagic infiltration. No rupture of blood vessels or point of departure for the hæmorrhagic effusion was visible in the brain or its membranes opposite the part struck, or in the opposite hemisphere which sustained the counter-stroke, although the extravasation was greatest upon this latter side.

Chest, natural.

The stomach small, contracted, empty; the liver somewhat enlarged and firm; the spleen natural in color and consistence, but enlarged seven or eight times—supposed to weigh from  $2\frac{1}{2}$  to 3 pounds.

The urinary bladder enormously distended with nearly a quart of urine. Other organs natural.

It was proved at the Inquest, and at the final trial before the Criminal Court, that M., the deceased, worked on the levee at wheeling up the batture or river deposit for filling lots, until between 4 or 5 o'clock p. m.; that about twenty-five minutes before his death he and sundry persons went into a house to drink spirituous liquor, whence they returned into the street. F., one of the drinking party, had an altercation with M., who was resting in a sitting posture. F. struck M. with the fist and knocked the latter down. Upon rising, F. repeated the blow. M. fell and died instantly, quietly and without speaking. Some of the eye-witnesses thought he died instantly, others that signs of life persisted from three to five minutes after receiving the blows.

It was also proved incidentally that the deceased had, a few minutes previously to his death, been seen urinating behind the levee.

F. was tried, before the late Judge Larue, for manslaughter, was convicted, and sentenced to the Penitentiary for a short period.

The substance of my testimony given before the Recorder and finally before the Criminal Court, was thus summed up in some of the city papers :

“Dr. Bennet Dowler, the physician who made the post-mortem examination of M., in two hours after his death, stated that the external wounds were inconsiderable. Had he not been told of the way in which the deceased came to his death, he would have the case set down as apoplexy. The blood was diffused over the entire brain, but the brain itself was healthy and not discolored; he could not say whether the man was or was not killed by a blow.”

Although the contusions in this case were slight, yet the blows which caused them may reasonably be supposed to have produced concussion of the brain, and this, as all know, often is sufficient to cause speedy death, with or without palpable lesions.



The blows and the falls probably ruptured the capillary vessels of the ventricles and meninges of the brain, from which the sanguineous extravasation proceeded. But did this extravasation precede or follow death? The post-mortem examination alone, without other evidence, is insufficient to decide this question. If nothing had been known of the previous history, symptoms and manner of the death, the supposition that the party had died of effusion of blood such as may occur from capillary or meningeal apoplexy would seem by no means irrational, seeing that the external wounds were inconsiderable, and that neither the substance nor the meninges of the brain had sustained any visible lesion beyond the effusion of blood as described.

According to my experience, one of the best symptomatic types of traumatic and even idiopathic apoplexy occurs in and near the region where M. was struck, in which the blow fractures the skull, lacerating the trunk or branches of the great meningeal artery of the dura mater. These fractures may happen without much injury of the skin, and without any depression of the bones. There is, of course, first concussion of the brain; but often the senses return immediately; the patient may talk and even walk about. But a gradual stupor, with stertor intervenes in from one to five or six hours, more or less, according to the rapidity of the effusion, and death follows gradually. In these cases, the blood vessel connected with or imbedded in the cranial walls or distributed to the dura mater, particularly the meningeal artery, being ruptured, the patient perishes, not from concussion nor inflammation, but from the pressure of a large mass of effused blood, constituting a traumatic apoplexy. If the site of this effusion could be diagnosed with sufficient accuracy, there can be no doubt that the trephine ought to be applied; here, if nowhere else, a compound fracture is less dangerous than a simple fracture accompanied with inter-cranial effusion, and having no exit.

A depressed portion of the skull produces the same general effects as a coagulum of blood pressing on the brain from a ruptured meningeal artery, resulting from simple fracture.

Considering the emergency of the occasion, the post-mortem in this case was made with more than ordinary care, the Jury of Inquest having indulged me with about two hours' dissection, as I had a double purpose in view, namely: to ascertain any lesions present, and also the natural appearances of the tissues in a subject that had passed from health to death suddenly. Although the examination was made at night, the light was nearly as good as that of day.

If inter-cranial extravasation of blood occurs after death, a new principle in forensic medicine and pathological anatomy must be admitted to

be valid. The natural history of both traumatic and idiopathic apoplectic effusions of blood in or upon the brain, shows that these are not instantaneous but gradual; and that the oppression of the brain, coma, stertor, the abolition of the senses and voluntary motion, and the extinction of life, proceed step by step with the accumulating extravasation.

In traumatic effusion, with or without\* fracture of the skull, in which a rupture of the meningeal arteries occurs, the concussion does not necessarily prove fatal, the progress of the case being, as already stated, very nearly identical with pure rapid apoplexy from the spontaneous rupture of blood vessels upon the periphery or within the substance of the brain. Hence, in the absence of external contusions and cranial fracture, and in the absence of the symptomatic history and other testimony, the mere effusion, the anatomical lesion *per se*, in the two cases, cannot always be distinguished by satisfactory criteria.

That post-mortem effusion may take place in the cranial cavity, as indicated by the above case, and as indicated by the analogies already alluded to, is further confirmed by numerous cases, in which death takes place without any well-marked symptomatic pre-mortem extravasations of blood in the cavities of the chest, although on making the autopsy afterward, very large effusions may be sometimes found both in the fluid and coagulated conditions.

After death from extravasation from a ruptured meningeal artery, a coagulated saucer-shaped disk of blood—thickest at the point of the arterial lesion, thinner towards its circumference, convex outwardly, concave inwardly, corresponding to the shape of the brain—will be found. In the case of M., nothing of this kind occurred. It seems utterly improbable, if not impossible, that an almost instantaneous extravasation could have proceeded from a single point, seeing that the blood was spread almost uniformly over the periphery of the cerebral and cerebellar masses, and was also effused into the lateral ventricles. On the supposition that the concussion was sufficient to have killed the man, and to rupture the delicate and minute capillaries of the meninges and ventricles, and that the blood escaped slowly from these at innumerable points for two hours after death, the mystery of the sanguineous effusion is solved.

But how is it possible to account for the enormous distension of the bladder which rose above the pubis and against the abdominal walls, as is often seen in the dead who have perished from diseases of the brain, and who, in their last hours, having been insensible, have not been

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\*Dr. M. M. Dowler has met with a case in which laceration of the meningeal artery, with fatal effusion, took place without any fracture of the skull, as proved by a post-mortem examination.

catheterized by forgetful or negligent physicians? A man working at the wheel-barrow, wheeling up levee mud, must have suffered much with his bladder thus distended. His brother, who had slept with him the night previous to his death, says that the deceased had no urinary disease or obstruction. It transpired incidentally, as already indicated, in the testimony given concerning the movements of the deceased, that a few minutes before his death he had stepped aside to urinate. This fact is the more worthy of belief, because it was not elicited or mentioned as being of any importance in the case.

Was this urine secreted after death? Reasoning from analogy concerning post-mortem contractility, post-mortem calorification, post-mortem capillary, chyloferous and other actions called vital, which I have often known to persist in bodies after death in the ordinary acceptation of that word, and reasoning from the testimony and the nature of the case, it would seem possible that this accumulation of urine was post-mortem! At the same time, I confess that I have neither witnessed a similar case, nor thought of the possibility of its occurrence previously.

I ascertained that M. had been drinking during the day. He worked behind the levee, where he could have emptied his bladder without exposure.

The hypertrophy of the spleen was probably due to intermitting fever which he had suffered from several years before his death, as I was informed by his brother, on making inquiry to that effect.

In the above case, as well as in others suddenly killed, I have not found post-mortem contractility of the muscles to be so prompt, powerful, and enduring, as I have witnessed it in numerous experiments upon cadavera that have perished from cholera, fevers and some other maladies. Jean Adam and Antonio Delisle, who were hung in New Orleans (July 2, 1852) for the murder of a slave girl, did not, twenty minutes after execution, exhibit an energy of muscular contraction upon percussing the flexors of their arms, comparable to that which I have thus excited in many bodies for hours after death from yellow fever.

[TO BE CONTINUED.]



## PROGRESS OF MEDICINE.

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ART. I. *Experimental Researches on Animal Temperature*, by M. BERNARD. Translated from the French. By M. MORTON DOWLER, M. D.

AT two several sittings of the Academy of Sciences of Paris, (Aug. 18 and Sept. 15, 1856\*,) M. Claude Bernard laid before that body a communication entitled, *Experimental Researches on Animal Temperature*. It treats 1, of *The Modifications of Temperature which the Blood undergoes in traversing the Digestive Apparatus*; and 2, of *The Modifications of Temperature which the Blood undergoes in traversing the Respiratory Apparatus*.

[The experiments and conclusions of M. Bernard, tending, as they directly do, to demolish the received doctrine of the calorific function of the lungs, cannot fail to attract the general attention of the profession. It may be justly said of M. Bernard, that he evinces the most consummate skill in conducting his physiological experiments, and that he submits the results obtained to the surest and most impartial scrutiny. His contributions to physiology are amongst the most wonderful and brilliant of which the science can boast, and in the investigation of its darkest points the light shines beneath his hand. Though the lungs have been declared by physiologists to be no more nor less than the furnace in which, by actual process of slow combustion, animal heat originates and is kept alive, no satisfactory experimental proofs of this doctrine has ever been proclaimed. Its basis is purely dogmatic, and it is by mere reiteration that the idea of *pulmonary combustion*, has been admitted into physiology. We translate the following from *L'Union Médicale*, of the above dates, in which the views of M. Bernard are put forth in relation to the source of animal heat, it being our purpose, on all occasions, as far as possible, to keep our readers advised in respect to the progress of medical science in the old world.—*Translator*.]

The digestive apparatus receives the blood of the abdominal aorta by the celiac trunk, and by the mesenteric arteries. After having circulated in the capillary vessels of the intestinal canal, pancreas, spleen, etc., and having served in the production of the different secretory and other phenomena which take place in these organs, this blood finds its way into the vena porta, where it is subjected to a capillary elaboration, to finally pass out by the hepatic veins into the vena cava inferior, not far from the heart. It will then be seen that the circulation of the digestive apparatus differs from that of every other apparatus in the

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\**L'Union Médicale*, Sept. 6 and 27, 1856.

animal economy in this, that the arterial blood, after having traversed the capillary system of the intestines, and having been changed into venous blood, does not immediately yield itself up to the general venous system, but traverses still another system of capillary vessels, those of the liver, which again renders it venous before it makes its appearance in the heart. It then becomes necessary, from the peculiarities here presented, to examine the temperature of the blood in three orders of vessels, viz: 1, in the arteries which conduct the blood into the intestinal canal; 2, in the vena porta, which contains the blood which has traversed the intestine and which takes its course towards the liver; 3, in the hepatic veins, which discharge themselves into the vena cava inferior, and transmit the blood which has traversed the entire digestive apparatus.

In order to determine the temperature of the blood in these different vessels, it is requisite, on the one hand, to produce as little disturbance as possible in the local circulation; and, on the other, to avoid exposing the organs so as to subject them to the influence of artificial refrigeration.

The method which has appeared to me to be the least attended with these inconveniences, and which I now proceed to give, is the following:

The animal being properly secured, an oblique incision is to be made in the right hypochondrium, extending from the articulation of the last rib with the vertebral column to the level of the crest of the os ilium. When the abdominal cavity is opened, eventration must be prevented and the intestinal package must be maintained, by pressing it to the left side. Then will be seen, in the bottom of the wound, the trunk of the vena cava, as also the renal veins, the mouths of which open into it. The right kidney is of easy access, being found in the extreme upper angle of the wound, reposing as it were on the articulation of the last rib. In the bottom of the same wound is discovered, still parallel to, and to the left of, the vena cava inferior, the ventral aorta, which is readily distinguished by its beating, but the calibre is masked by the cellular tissues, and by the great number of nervous branches which surround it. Finally, we perceive to the right and upwards, under the *ansa* of the duodenum, the principal meseraic veins, which ascend toward the trunk of the vena porta, which is situated below the liver.

In order to obtain, by means of this procedure, the temperature of the arterial blood which enters into the digestive apparatus, we must take this temperature, not in the mesenteric arteries, which is generally impracticable, owing to the multiplicity of blood-vessels, but it is necessary to determine the temperature in the abdominal aorta on a level with the opening of the celiac trunk and of the mesenteric artery. The

temperature of the blood which returns from the intestines must be taken in the trunk of the vena porta. And, finally, in order to take the temperature of the blood which emerges from the liver, we must take it in the hepatic veins by penetrating the vena cava inferior.

When we have to deal with animals (dogs) of large size, we may succeed in the different vessels we have indicated by the mode of operation we have proposed, without producing any notable disturbance of the circulation. It is carried into effect in the following manner: The right kidney, which lies uncovered, is drawn forward, the renal vessels are to be isolated with precaution from the surrounding tissue, to be secured by ligatures properly applied, in order to prevent the escape of blood. Through an incision made in the renal vein the thermometer is made to penetrate into the vena cava inferior, and then to be pushed upward until it arrives on a level with the mouth of the hepatic veins, and we may cause the bulb of the thermometer to penetrate into these veins by an appropriate *manceuvre*, which consists in inclining the body of the animal, at the same time from right to left.

And further, by means of an incision made into the renal artery, we have access to the abdominal aorta very near the place of the emergence of the celiac trunk and of the mesenteric artery. There then remains only to be examined the trunk of the vena porta, into which we may readily penetrate by the duodenal vein, which serves to admit the thermometer quite into the trunk of the vein below the liver.

In this latter procedure which we described, the thermometer will penetrate by means of the collateral vascular rami quite into the trunks, where the bulb of the instrument will be surrounded on all sides by a quantity of blood sufficiently great to keep it from being in contact with the parietes of the vessels. But when the animals (dogs) are of medium or diminutive size, it becomes impossible to thus penetrate into the vascular trunk by means of the collateral branches, and it becomes necessary to abandon this method and to enter directly by incisions into the vena cava, the vena porta and the aorta, which necessitates the application of ligatures which more or less completely intercepts the circulation in these vessels. It is possible, however, to so apply these ligatures that they may be very nearly without influence on the intestinal circulation. To effect this, I penetrate the aorta below the emergence of the renal arteries, and then I direct the bulb of the thermometer forward till it arrives on a level with the celiac trunk and the mesenteric artery, and by this means obtain the temperature of the arterial blood which is about to distribute itself to the digestive apparatus. It will be seen that by this procedure the circulation is not intercepted excepting below the ligature, and that it remains free above in



the vessels which lead to the digestive organs. By penetrating, in like manner, the trunk of the vena cava inferior below the renal veins, the circulation is restrained only in the posterior members, but not at all in the hepatic veins. It is more difficult, in this second procedure, to bring about the penetration into the vena porta without affecting the intestinal circulation. Nevertheless, the operation can only be partially modified by ligating the vena porta below the mouth of the splenic, gastric and duodenal veins. There then remain the stomach and a sufficiently great extent of the superior portion of the small intestine in which the circulation is very well carried on, and carries the blood into the superior part of the trunk of the vena porta. Finally, to obviate these inevitable inconveniences as much as possible, the arrangement should be so made that the temperature of the vena porta should be taken only after taking that of the other vessels.

In the numerous experiments which I have practised by the two methods, here described, I have realized the certainty that, apart from certain influences which the ligation of these large vascular trunks may have on the absolute temperature of the blood—influences to which we shall hereafter recur—they do not notably modify the relative temperatures, and what proves the fact is, that I have sensibly obtained the same relations between the temperatures in the various vessels of the digestive apparatus, in alternately operating by the two methods I have described. It is scarcely necessary to add that, in all these experiments, it is necessary to act with the greatest celerity, in order to avoid the cooling of the organs subjected to the experiments and a too great modification of the organism superinduced by the fatigue and perturbation. It happens sometimes, indeed, in animals enfeebled by the continuance of the operation, that the temperature falls, and this circumstance must be well foreseen, in order that care may be taken to compare amongst themselves only those observations of temperature made in the different vessels at the same period of the experiment. And it is further worthy of remark, that, in the violent motions of the animal, there may supervene such circulatory conditions that marked modifications of temperature may result. We shall hereafter treat of the causes of these modifications, but we shall not take them into account to-day in the result of our experiments, which have been obtained only when the animal was calm, and the circulation was as normal as possible.

The thermometers which I have used are sometimes the mercurial metastatic instruments of Walferdin, sometimes the mercurial thermometers constructed by Fastré. I have always made my comparative experiments with the same thermometer, which was always successively plunged in the different vessels.

I have pursued this method, which is recommended in general terms, because it is really to be preferred in order that results may be compared, and that there may be no necessity of taking into consideration, the differences which present themselves in the instruments of experimentation which are employed. I must, however, once for all, state that, in experiments made on living animals, this method has its disadvantages, and it would be infinitely preferable to have, if it were possible, two thermometers of ready comparability, which might be at the same instant plunged into the two blood currents of which it is proposed to take the temperature. It may happen, in fact, in a medium so changeably affected by the living organism, that during the time, how short so ever it may be, (and one or two minutes are required,) which separates the two successive observations, there may occur transient modifications capable of notably influencing the temperature of the blood, accordingly as the animal may be calm or agitated, or accordingly as it may become exhausted, or suffer pain, etc. Owing to this fact, we should never content ourselves with a single observation. It is necessary to return many times to the same vessels, and reverse the order of observation, in order to obtain the assurance that the differential result obtained is not accidental.

The bulb of the thermometer which I have most generally used is from four to five *millimètres* (from 0.156 to 0.194 of an inch) in diameter, and from two to three *centimètres* (from 0.686 of an inch to 1.179 of an inch) in length. The volume of this bulb does not restrain the circulation in the vessels in which it is placed, and its very thin parietes give to the thermometer a great sensibility. Each centesimal degree is divided into five parts, of which it is easy to appreciate the half, that is to say the tenth of a degree. Finally, I would add that the bulb of the thermometer was always deeply plunged in parts which had not been exposed to the cooling process by contact with the air. It is thus that the hepatic veins, the vena porta, the celiac trunk and the mesenteric artery, in which I have examined the temperature of the blood, are found alike placed against the vertebral column, very nearly on a level with the diaphragm and in identical conditions of protection against external refrigeration.

Meanwhile, after having, as exactly as possible, set forth the course followed in the experiments, I now proceed to give their results, which I have grouped in three *tableaux*, which correspond to the three orders of vessels appertaining to the digestive apparatus.

The first *tableau* gives the results of the comparative temperature of the blood, before and after traversing the digestive apparatus—that is to say, in the abdominal aorta and in the hepatic veins.

The second tableau gives the results of the comparative temperature of the blood, before and after having traversed the intestines—that is to say, the arterial aortic blood and the blood of the vena porta.

The third tableau gives the results of the examination of comparative temperature of the blood, before and after traversing the liver—that is to say, the blood of the vena porta, and the blood of the hepatic veins.

On the inspection of these three tableaux, it will be discovered that there is a constant increase of temperature of the blood in its whole tract through the digestive apparatus, and at the same time there will be seen the part acted by the intestine and liver in this increase.

It would be altogether illusory and even erroneous to draw mean values from the figures consigned to these tableaux, from the fact that the animals submitted to observation were often found to be in different conditions, and to exhibit not an exact comparability among themselves. It is the observations made on the different vessels of the same animal, which admit of comparison, and it is from this comparison that we deduce the consequences.

Moreover, there may be seen, by inspection of the results set forth in the first tableau, *that the blood which has its exit from the digestive apparatus*, after having traversed the two sanguiferous capillary systems, that of the intestines and that of the liver, *is constantly found to be of a higher temperature than at its entrance.*

The opposite conditions of abstinence and digestion, which, *a priori*, it would appear so important to compare together, do not appear to greatly modify the constant results, which we have here signalized; and often the increase of temperature has most strongly shown itself in animals which have been fasting.

The second tableau gives the changes of temperature that the blood undergoes in traversing the capillary system of the intestines. It will be seen that, generally speaking, the temperature increases. Nevertheless, there are some observations made in which there was equality or even a slight sinking of temperature. These specialities are easily explained from the fact, that the intestinal mucous membrane is in reality an external surface, in contact with which is brought, by alimentary ingestion, substances from without, and which at times are capable of producing a fall of temperature, which is necessarily communicated to the blood circulating in proximity.

The third tableau shows the modifications of temperature that the blood undergoes in traversing the hepatic capillary tissue alone. Here there is a constant increase of temperature in the liquor sanguinis, and on examining the figures of difference, it will be seen that this growth of temperature is relatively very great.



To sum up the whole, the experiments (the results of which are contained in this paper) establish these facts:

1. That in the digestive apparatus the blood experiences a constant increase of temperature, and to such extent that, in this apparatus, the venous is warmer than the arterial blood:

2. That the blood which issues by the hepatic veins is a constant source of calorification to the blood which goes to the heart, through the vena cava inferior. We may even add that so far as is known at present, it is the principal source, for in no portion of the circulatory system of the blood is it so warm as in the hepatic veins, and our tableaux of experiments show that, in animals in the most vigorous condition, the temperature may attain  $41^{\circ}.6$  centigrade.

3. That amongst the organs which concur in elevating the temperature of the blood in the digestive apparatus, the liver occupies the first rank. Whence it results that this organ must be considered one of the principal sources of animal heat.

Here M. Bernard gave notice that, at no distant day, he would lay before the Academy his observations on the modifications of temperature which the blood undergoes in traversing the respiratory apparatus.

Pursuant to announcement, at a previous meeting of the Academy, M. Bernard read the continuation of his "*Experimental Researches on Animal Heat*." This second part relates to the modifications of temperature which the blood undergoes in traversing the respiratory apparatus.

M. Bernard, having at much length pointed out the sources of the error which, up to the present time, have led physiologists to maintain that the blood in the right cavity of the heart is of a higher temperature than that of the left, reports as follows the experiments which he has made, in order to determine the temperature of the blood in the cavities of the heart, before and after the passage of the blood through the respiratory apparatus:

To obtain the temperature of the blood, before and after its having traversed the respiratory apparatus, the procedure of taking the temperature of the same in the right and left ventricles of the heart naturally suggests itself. It will, indeed, be impossible in the living animal, to determine in the vessels themselves the temperature of the blood, either in the pulmonary artery which conducts this fluid to the lungs, or in the pulmonary veins by which it is conveyed from thence, after having traversed these organs. But the blood of the right side of the heart is in reality the blood which is about to enter the lungs; and that of the left ventricle also very well represents the blood which has just traversed the respiratory apparatus. Each kind of blood bears the temperature sought to be taken.

The first experiments which I made were practised on dogs, and by means of the following operative procedure:

The animal being properly maintained, lying on the back, I make an incision in the right and inferior part of the neck, and I isolate successively the right jugular vein and the carotid artery of the same side as far down as possible without entering the chest. I tie the two vessels and I pass below a provisional thread, and through an incision into the artery, as also into the vein, I introduce the thermometer into the right and left ventricles, at the same time placing on the vessel and around the instrument the ligature moderately tightened, with the view only of preventing the entrance of air into the right ventricle and the escape of blood from the left. The entrance of the instrument into the ventricle is known by the arrest of further advance of the thermometer, and by the agitation communicated to it by the contractions of the heart. The right ventricle is easily entered by the descent of the instrument through the jugular vein and its passage through the auricle. To attain the left ventricle it is necessary, in dogs, to pass the instrument first by the carotid artery, then by the trunk of the brachio-cephalic, and to enter the arch of the aorta, in order to penetrate directly through it into the left ventricle. It sometimes happens that, by this manœuvre, the semi-lunar valves of the aorta are torn; and this accident may bring about certain disturbances of the circulation of which we shall hereafter speak, when treating of the modifications of temperature which the disturbances of the circulation superinduce in the blood. At present we shall only refer to the results showing themselves in animals which remain calm, and in which the conditions of the circulation continue as normal as possible.

[The author here gave a summary of the results of his experiments in a tableau.]

According to the experiments reported in this tableau, it will be seen that the blood of the right ventricle, at the moment in which it enters the lungs, was always been found of a higher temperature than the blood of the left ventricle, which has just escaped from the respiratory apparatus. The difference does not exceed 2-10 of a degree; but the difference is shown to constantly exist. According to these same experiments, the states of digestion and abstinence appear to have had an evident influence on the temperature of the blood in the heart. In a fasting animal, the differences of temperature are generally more considerable, and they appear in a less degree during the digestive period. But, at the same time the absolute temperature of the blood appears to rise. This is seen by a comparison of the experiments amongst themselves. But, continues M. Bernard, I have been able to verify this re-

sult in a much greater comparability of manner in one and the same animal. In the dog of the fourth experiment, the temperature, fasting, was  $38^{\circ}.8$  in the right ventricle;  $38^{\circ}.6$  in the left, there being consequently, 2-10 difference. The day following, the same animal being in full digestion, the temperature was  $39^{\circ}.2$  for the right, and  $39^{\circ}.1$  for the left ventricle, there being 1-10 for the difference. We perceive that in this last result, that the difference of temperature between the bloods had diminished, but that their absolute temperature had augmented. I may here remark, in conclusion, that my experiments have been made on animals which were in the best possible physiological conditions, since they not only did not die under the operation, but they survived very well, retaining their appetite, and they could thus at various times be made to undergo observations in their various conditions.

But I have not rested satisfied with these experiments alone, and as I had here to deal with results of the highest importance in relation to the theory of animal heat, I deemed it necessary to verify them by experiments on other animals, and to surround myself with all the possible guaranties of exactitude. To this end, I solicited M. Walferdin, whose competency in thermometric questions is so well known to the Academy, and whose instruments are endowed with so great a precision, to do me the favor of assisting me in the determination of these temperatures in living animals.

At the slaughter-house at Grenelle, acting in concert, we conducted a course of experiments on sheep, the results of which I give, and which accord perfectly with those previously obtained on dogs. The temperatures were taken with the mercurial metastatic thermometer of M. Walferdin, divided into an arbitrary number of parts, of which each division represented about the one-hundredth of a degree, which could thus be read directly on the instrument.

The operative process necessary to penetrating into the heart presents every facility in the sheep. From the fact of these animals having the neck relatively long, it is possible to carry the incision very near the origin of the vessels at the heart, without laying open the chest. I make a longitudinal incision in the middle and inferior part of the neck, which opening should be prolonged to the sternum. The sterno-hyoid and sterno-thyroid muscles of the right side are to be everted, and the right carotid artery is found immediately beneath, at its origin in the trunk of the brachio-cephalic. The jugular vein is found more outwardly and more in front. Sometimes the vessels are somewhat masked by a prolongation of the thymus gland, which is found in the wound. This can be torn away without any inconvenience, and without producing hæmorrhage. The thermometer must always be introduced into the



left side of the heart by the brachio-cephalic artery, and into the right by the jugular vein, observing the same precautions already indicated, and which I need not recount. The comparative observations have been made with the same instrument successively and alternately in the right and left ventricles, and verifying always the same results. The experiments—the results of which are grouped in the second tableau—have been made on animals in a calm condition, with their circulation as little disturbed as possible.

It may be seen from this tableau, that the experiments made on sheep lead to the same conclusions with those made on dogs, namely: that the blood of the right ventricle is warmer than that of the left.

It will be seen hereafter that the excess of temperature is communicated to the blood of the right ventricle by the vena cava inferior, and not by the vena cava superior, in which latter the blood is of a lower temperature. We shall only show at present that this mixture of all venous bloods of the body, which takes place in the right ventricle, at the very moment it is about to be forced into the lungs by the pulmonary artery, is warmer than when it issues from these organs and arrives in its arterialized state in the left ventricle. Whence we are forced to admit that the blood is refrigerated by its contact with the air on the pulmonary surface, which may be considered, in this behalf, as a true external surface.

To sum up the results of the experiments detailed in this paper, which have been made on living animals, I believe that in examining them with all the rigor of which this species of research is at present susceptible, it may be legitimately concluded:

1. That the transit of the blood through the respiratory apparatus is a source of refrigeration to that fluid;
2. That hence the lungs cannot be considered as a generator of animal heat;
3. That the transformation of the venous into arterial blood, in the living animal, is not coincident with an augmentation of temperature in this fluid, but, on the contrary, with a diminution of temperature.

In a future communication, M. Bernard proposes to examine the modifications of temperature which the blood undergoes in traversing the genito-urinary apparatus.

ART. II.—*Experimental Physiology. Supra-renal Capsules.* Translated and condensed from the French. By M. MORTON DOWLER, M. D., New Orleans.

Gazette Hebdomadaire de Médecine et de Chirurgie; September 12, 1856. Academy of Medicine.—*Experimental Physiology*: Note on the ablation of the supra-renal capsules. By M. GRATIOLET.—The author recalled the experiments which he had made in the course of the winter of 1853–4, exclusively on Guinea-pigs, with a view of studying the functions of the supra-renal capsules.

I. Of the animals operated on in the right side :—From this first series of experiments his conclusions are ; 1, that in itself, the ablation of a supra-renal capsule in Guinea-pigs, does not produce death ; 2, that it does not necessarily produce convulsions ; 3, that the supra-renal capsules when wounded, readily cicatrize and are cured.

II. Of the animals operated on in both sides at once :—All have died within the forty eight hours next succeeding the operation, with evidence of hepatitis and peritonitis.

III. Of the animals operated on in the right capsule only :—All died in the same space of time and with the same lesions.

M. Gratiolet in proceeding to the interpretation of these facts, thinks that death which follows the ablation of the right capsule, does not result from its absence as a supra-renal capsule, but, rather from its anatomical relations with the root of the liver, and with the vena cava inferior, with which it is so intimately connected. It may then be considered that death is sufficiently accounted for by the development of hepatitis and peritonitis.

If death be, then, so constant after the ablation of the right capsule, we may *a fortiori*, expect a fatal result after removal of both supra-renal capsules.

[These experiments present a very different showing from those of M. Brown-Séguard, the deductions from which we translate from *L'Union Médicale*, as presented to the Academy, by M. Trousseau, at the sitting of August 26, 1856.—*Trans.*]

M. Brown-Séguard concludes :—

1. That these capsules have great sensibility.
2. They gain both in weight and volume, from birth to adult age, so that they cannot be regarded as vestiges of embryonic organs.
3. The extirpation of both capsules, kills the animal almost as certainly as, and even more rapidly than, the extirpation of the two kidneys. M. Brown-Séguard has experimented on sixty animals, and has seen death take place in eleven hours and a half after extirpation.

4. The duration of survival does not exceed seventeen hours, when only one of the capsules has been extirpated.

5. In none of these cases could death be attributed to hæmorrhage, peritonitis, lesion of the liver, or any other important organ situated in the vicinity of the capsules.

6. The lesion of the semilunar ganglion, (which is otherwise rarely implicated in the extirpation,) causes palpitations of the heart, but does not cause rapid death in animals.

7. When the two capsules are extirpated, a series of phenomena are observed, which are pretty constant, to wit : an excessive feebleness ; a respiration, at first very active, but soon becoming slow, sighing, irregular ; acceleration of the heart's action ; a lowering of the temperature ; and at the approach of death, nervous phenomena, as vertigo, convulsions, coma, etc.

8. A single capsule being extirpated, the same symptoms are produced, but more slowly ; and after the first period during which the animal seems to recuperate ; when convulsions are produced, they occur on the side on which the extirpation has been practised, and the animal is seen to turn gimblet-like, on itself as after one of the middle cerebellar peduncles is divided, and this rotatory movement takes place from the side operated on, towards the sound side.

9. There exists amongst the rabbits, in Paris, an enzoötic or epizoötic, characterized by an inflammation of the supra-renal capsules—an inflammation which produces the same effects as the extirpation of these organs.

10. The blood of the diseased rabbits injected into other rabbits, brought about a disease similar to those which result from extirpation and inflammation of the supra-renal capsules.

11. Wounds of the spinal marrow, as have been shown by M. Brown-Séquard, as early as 1851, occasion a hyperæmia of the capsules, whence may result either hypertrophy or violent inflammation, under which the rabbits speedily succumb.

At a late sitting of the Academy, M. Bouillaud severely examined the experiments of M. Brown-Séquard, in relation to the effects on mutilation—the pricking the organs, the tearing, crushing, uprooting, etc., of the supra-renal capsules. These, it will be remembered, continues the editor of *L'Union*, were spoken of by M. Bouillaud, as *amusing physiological experiments*!—Amusing! Certainly not amusing for the poor animals—a hundred of them! which have undergone this discipline! This astonished every one, and especially M. Brown-



Séguard, and that able physiologist disavowed all intention of *amusing* M. Bouillaud.\*—(*L'Union Médicale*, Sept. 4, 1856.)

At a subsequent session, M. Brown-Séquard addressed a letter to the Academy, touching the experiments which had been criticised by M. Bouillaud, *en disant qu'elles étaient de la physiologie amusante*. His letter ends with the following conclusions ; 1, the study of the symptoms which succeed the extirpation or the lesions of these organs or portions of these organs, belongs to *serious* physiology ; 2, the functions of the supra-renal capsules, though yet undetermined, are indispensable to the maintenance of life, and appear to be even more important than the functions of the kidneys ; 3, the preceding proposition, supported, as it is, on a very great number of experiments, is a first step made towards a knowledge of the functions of the supra-renal capsules.—(*L'Union Médicale*, Sept. 4.)

ART. III.—*Glycosuria Physiologica*. Translated from the *Union Médicale*, for the New Orleans Medical and Surgical Journal. By J. P. BARBOT, Apothecary.

M. Hippolite Blot, *chef* of Obstetrical Clinics in the Faculty of Paris, read to the Academy of Sciences, at its sitting of October 6th, 1856, the following paper :—

On the *glycosuria physiologica*, (saccharine urine,) of women in child-bed—of women whilst suckling, and of a number of pregnant women.

Hitherto, the presence of sugar in urine, has been considered by physicians as the pathognomonical sign of one of the most serious of diseases ; *i. e.*, diabetes.

Numerous researches made by me, the condensed summary of which I have now the honor to submit to the Academy, have yielded results which must hereafter deprive this sign of its pathognomonical importance. I have clearly ascertained by these results that *sugar exists*

\* It seems that the solemnity of the Academy is not perennial, being occasionally enlivened by a witty, jocosé, or eccentric member, who dissipates the *maud* engendered by too much learning, as in the following scientific *discoisement*. We have heard various apologies offered by public speakers and lecturers for the length of their discourses ; but the apology of the celebrated M. Ricord, for detaining the Academy on a late occasion, is perfectly *sui generis* and specific. A discussion arose in which MM. Gilbert, Malgaigne, and Ricord took part, touching the appropriate mode of operating in case of congenital preternatural elongation of the prepuce, which occupied much time. M. Ricord, in warmly debating the point with M. Malgaigne, said :—“ *J'en demande pardon à l'Académie ; si cette discussion se prolonge, la faute en est à la longueur du prépuce.* ” “ I beg pardon of the Academy : if this discussion has become lengthened out, it is owing to the length of the prepuce.”—(*Trans.*)

*normally in the urine of all women in child-bed, of all women whilst giving suck, and of a number of pregnant women.*

I would state, in order to give greater weight to these results, that I have had associated with me, in the chemical portions of this work, M. Reveil, Adjunct-professor in the School of Pharmacy, and that on several occasions, I have had recourse to the collaboration of M. Berthelot, whose beautiful works on Organic Chemistry, are known to all. Moreover, a great number of the facts contained in the following extract have been shown by me to a number of physicians, and particularly to two, members of the Academy of Sciences, MM. Rayer and C. Bernard.

In order to demonstrate clearly the fact announced by me, I have made use of all the necessary means to ascertain the presence of sugar in any liquid. They were employed in the following order: 1st. The urine to be examined was treated by the *liquor cupro-potassicus*, of a graduated strength. I have always used Fehling's; and in order to avoid the possibility of any mistake, the urine had been previously purified, at first, by acetate of lead, and subsequently by *hydro-sulphuric acid*, for the purpose of removing therefrom any principle, other than sugar, that might have had any effect on the reagent. In the latter half of my researches, I have substituted for the above, a simpler and prompter mode of purification: to-wit, animal charcoal.

2d. The caustic alkalis of potass and lime, when mixed with this urine, rendered perfectly colorless by animal charcoal, have produced a beautiful brown color, of greater or less intensity.

3d. This was my main proof, namely, fermentation, leavening with brewer's yeast, care having been previously taken to make a comparative trial of the yeast employed, either with non-saccharine urine, or with distilled water, all of which were mixed in equal proportions and in equal quantities, and were exposed to the same thermometrical conditions. I have invariably obtained thereby, on the one hand distinctly characterized alcohol, and on the other hand, carbonic acid, which is easily absorbed by potassa. I would add, that I have ascertained by counter experiment that the liquid remaining after fermentation did not react on the *liquor cupro-potassicus*.

Generally speaking, this fermentation at a mean temperature of from 30° to 35°, Cent., was accomplished in from 12 to 24 hours.

I have the honor to present to the Academy a small sample of alcohol, obtained in this way.

Lastly, after having slightly concentrated and thoroughly decolorized the urine to be examined, I have been able, thanks to the kindness of M. Berthelot, to ascertain that it polarized light to the right.

Thus, the principal fact that I wish to establish now, that is, the existence, in the normal or physiological condition, of sugar in the urine of *all* women in child-bed—of *all* who nurse, and of a certain number of pregnant women, can no longer be doubted, since in their urine are found united the four properties characteristic of sugar *alone*, to-wit :—

1st. Reducing the liquor cupro-potassicus.

2d. Yielding a brown color with the caustic alkalis of lime or potass.

3d. Yielding by fermentation, both alcohol, and carbonic acid.

4th. Polarizing light to the right.

Let us now see what are the conditions in which this saccharine urine is found : In *all* pregnant woman (45 times in 45) it is, at the period of the lacteal secretion that sugar begins to be developed in the urine in quantities sufficient to be noticed ; in a great number of women it does not appear before then, with some it happens previously, but generally, in minute quantities.

If the secretion of milk be very abundant, the saccharine formation goes on steadily, varying, however, in daily proportions not yet ascertained by me.

When the secretion of milk is very abundant, the secretion of sugar is abundant and *vice versa*. Thus, an examination of the urine of a wet nurse, may serve to a certain point, to ascertain her value as such. For, if the lacteal secretion be checked or arrested by any cause, and particularly by the development of a morbid condition in the nurse, of greater or less gravity, the sugar will either diminish, or disappear entirely. If sickness give way to health, and the milk reappear, sugar will again be formed. Her urine will contain sugar as long as the secretion of milk will last. I have found notable proportions of it (8 grammes in 1000—3ij in a quart,) in a nurse who had been giving suck for 22 months.

I need not add, that none of these women, in either of the three conditions above mentioned, presented any symptoms of diabetes ; on the contrary, their urine contained a greater or lesser quantity of sugar, according to their nearer or further approximation to perfect health.

When lactation ceases, sugar disappears from the urine. This, however, happens at different times in different subjects ; sooner in women who do not suckle, more slowly in those who, after having done so, begin to wean. In the latter particularly, the disappearance of sugar, may offer some alternations. I have sometimes found some one day, none the next, and again found it the third day ; but one thing is constant and certain—that is, the reduction of sugar, to minute proportions



as soon as the mammary tumefaction following weaning, has disappeared.

From what precedes, it seems to me impossible not to admit, that *glycosuria physiologica*, is in direct proportion to the lacteal secretion. We will see farther on the nature of this relation to one another. It is sufficient for me to establish the point now.

I have stated above, that the saccharine formation varied in different persons and at different periods of lactation. I would now add, that it is ordinarily, considerably less, than in diabetes. The quantity I have been able to ascertain as existing has varied from 1 or 2 grammes up to 12 grammes in 1000. I would, however, remark in connection with this, that the above quantities have been found in the urine passed in the morning, which urine is possibly the least saccharine. At any rate, it is now clearly demonstrated that in the urine of *all* women in child-bed, of *all* women whilst suckling, and of a number of pregnant women, sugar exists normally. I have found sugar in the urine of the latter (the pregnant women) in about 50 per cent. of the number of persons examined. I believe, but will not state so positively, that this peculiarity, (the saccharine formation) exists particularly when the sympathetic phenomena of pregnancy with full development of the mammae, and that it is wanting, when, on the contrary, the breasts are not affected by utero-gestation.

Having ascertained the existence of this *glycosuria physiologica* in women, I was naturally led to suppose that the same might be found in the females of all mammiferous animals. Being unwilling to trust to anything but direct observation, I have made experiments, which, in nine trials, have clearly shown *in each case*, that this condition also exists in the *cow*. I will, with the permission of the Academy, communicate to you, at a future sitting, the result of my investigations, and will, at the same time state the nature of the sugar found, which will naturally lead me to an *exposé* of the most probable theories of what I would willingly call this new function. At some future period, I will give fuller details in a complete memoir I am now preparing on this interesting subject.

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ART. IV.—*Glycogenia.—Production of Saccharine Matter.* Translated from the *Gazette Médicale*; p. 611. Oct. 4, 1856, for the N. O. Med. and Surg. Jour.

THE problem of the production of Saccharine Matter is too well known to the readers of the Medical Gazette, to require us to repeat the main

points. During more than two years this topic has been discussed in the Societies ; it must be considered as one of the most familiar subjects of cotemporary science. We limit ourselves with the view of aiding the reader to understand what follows, to recapitulating the main features of the questions, and the chief shades of opinion which the Medical Gazette has had an opportunity of disseminating, in this important and difficult controversy. M. Bernard said that the liver formed the sugar of the system. It had been previously maintained that the liver separated the sugar from the blood, as the kidneys do urea. It must be admitted that till the present time—by aid of a multitude of ingenious experiments, the theory of M. Bernard has prevailed. Nevertheless able adversaries have assaulted it, while defenders no less competent have interfered to such a degree, that now there are two camps—two parties—the one sustaining the theory of saccharification by the liver, the other maintaining that the liver is only a condenser or eliminator of saccharine matter formed in the intestines or elsewhere.

MM. Lehmann, Piggiola and Chauveau, are the chief supporters of this doctrine, MM. Figuier, Mailhe and Colin, being its opponents. Thus the Medical Gazette has continued to repeat : “ In this controversy we will distinguish the facts and opinions, the experiments and the inferences.” We have been obliged, without taking sides in the controversy, and while rendering credit to both parties, to make reservations against both ; for both partisans and opponents have been too sweeping in their conclusions, having appeared to us to go beyond the facts. But let us not anticipate in our account of the facts and theory separately. It will be recollected that in a report which was the subject of a careful examination by us, M. Dumas had reduced the whole discussion to this simple fact, namely, is there, or is there not, sugar in the blood of the portal vein during the digestion of animal matter ? M. Figuier had said, yes. He had shown the presence of sugar in the portal vein by the means of chemical reaction, but not by fermentation. The absence of fermentation, on the importance of which the Medical Gazette dilated, had been sufficient to cause M. Dumas to infer the absence of saccharine matter in the blood of the portal vein. This was the point in question. M. Colin resumed his investigation, and demonstrated the existence of sugar, not only in the portal vein, but in the chyliferous vessels. Finally, M. Chauveau, although a partisan of the theory, has confirmed, by a process which does not seem any longer disputable, the presence of sugar, not only in the portal vein, but in the whole mass of the blood, and this long after MM. Bernard, Lehmann, Piggiola and others, found it no more in the liver.

These established facts have, therefore, progressed much since the report of M. Dumas. We are forced to add that the theory has not progressed in the same degree.

The want of evidence of sugar in the portal vein during the digestion of animal matters, was the stronghold of this theory. No sugar in the blood before its entry into the liver, no sugar at its issue by the supra-hepatic vein,—what could be clearer, or more conclusive? The sugar is formed in the liver. Perhaps our readers will recollect the reservations of the Medical Gazette as to the value of this reasoning.—Our reserves were founded on two points: first, that the non-establishment of the existence of sugar in the portal vein, is not an absolute proof of its absence; and it was on this behalf that we expressed doubts on the value of fermentation as an affirmative or negative proof of the presence of sugar. Our second reserve was founded on this conclusion that the presence of sugar in the blood, on issuing from the liver has, as we have said, only the value of an experimental fact—of an empirical proof.

The mind, in order to be satisfied, requires something more reasonable. It demands that there be shown a more exact connection, a more direct effect from the cause.

Experience has justified our reservations on this subject. It is now proven that there is sugar in the portal vein—that it is there, elsewhere, and everywhere, even a long time after abstinence, until the animal becomes cold and dies. Has the progress of the discussion invalidated our reservations as to the theoretical conclusions? M. Chauveau, the new adept for the production of saccharine matter, is fully convinced of the triumph of the theory. Certainly, if the correctness of the logic were equal to the sagacity and ingenuity of the experimenter, we would not have had to reply, and as he announces it, nothing would remain but to do homage to the talent of the discoverer. But has not the young chemist, in his enthusiasm as a neophyte, allowed himself to be drawn too far? We fear he has. After having demolished with his own hands what M. Dumas regarded as the corner stone of the building of M. Bernard—after having demonstrated the presence of sugar in the portal vein, M. Chauveau regards the theory of the production of sugar as definitely demonstrated. Why? Because, there issues from the liver, more sugar than enters it; because, he finds more sugar in the supra-hepatic vein than in the portal vein. It will be enough to observe to him that this mode of reasoning has changed in nothing that of M. Bernard; it has only weakened it. The author of the theory said, there is no sugar in the blood which reaches the liver, but sugar after the blood issues from the liver; therefore, the liver forms the sugar.—



M. Chauveau says there is little sugar in the blood which enters ; more sugar in the blood which issues. It is clear, that the only question is one of quantity and degree, and the reservations of the Medical Gazette on the purely empirical character of the deductions are sustained in all their weight.

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ART. V.—*Influence of the Obliteration of the Vena Porta on the secretion of bile, and on the glycogenic function of the liver.* *L'Union Medicale* Sept. 13. 1856. Translated and condensed from the French : By M. MORTON DOWLER, M. D.

M. Oré addressed a memoir, under this title, in which he reports a series of experiments made with a view of studying the influence of the obliteration of the vena porta on the secretion of bile. These experiments have been undertaken by request of M. Gintrac (of Bordeaux) with reference to a case, occurring under the observation of this physician, which seemed to weaken the physiological theory which contemplates the vena porta as furnishing to the liver the materials of the biliary secretion.

In the first two series of experiments, the vena porta was tied or obliterated by different processes, and it was found that in spite of this obliteration, the gall-bladder was constantly full of bile, and that the matter contained in the intestine was colored by this secretion.

In a third series of experiments the author investigated, at one and the same time, the influence of the obliteration of the vena porta on the biliary secretion, and on the glycogenic function of the liver. The four experiments of this series, appeared to him to confirm, in the most positive manner, the theory of the formation of sugar in the liver, established by M. Claude Bernard.

This physiologist, says M. Oré, has seen the secretion of sugar disappear from the liver when the organ has become diseased. This fact finds confirmation in one of the experiments of the third series, in which the liver, presenting abscesses in one of its lobes, did not contain sugar in this part, but on the other hand, contained abundance of it in the portion of the organ which retained its normal condition.

In another experiment, in the same series, the liver presented abscesses throughout its whole extent, and did not contain the least trace of sugar, which is a new confirmation of what we have before said.

And, finally, in the last experiment, he has found abundance of sugar in the liver, though the vena porta was obliterated, and the substances resulting from the transformation of alimentary materials, that is to say, albuminose and glycose, could not any longer penetrate into the organ. This last experiment shows clearly, that the liver, as a reservoir of sugar, does not receive its supply, as such, by alimentation.

The author sums up his memoir by drawing the following conclusions :

1. The secretion of bile, having continued notwithstanding the partial or complete obliteration of the trunk of the vena porta, I hence conclude that it is not the blood of this vein which furnishes the materials of this secretion. It is at the expense of the blood of the hepatic artery, that the liver secretes this fluid. The biliary, like all other secretions, is therefore effected at the expense of the arterial blood. I have shown in my memoir why the obliterations of the hepatic artery cannot serve to determine the question, and how these obliterations show nothing tending to invalidate the conclusion which I have announced.

2. The secretion of sugar, by the liver, not having been changed by obliteration of the portal vein, it becomes evident that the production of sugared matter, as has been shown by M. Claude Bernard, results from the action of the liver itself, independently of alimentation.

3. The materials—albuminose and glycose—resulting from the digestion of amylaceous and albuminoid matter, not being able to traverse the liver, are not however lost to the organism, as may be realized by the anastomotic circulation existing between the superior mesenteric vein and the vena cava inferior.

4. And lastly, it is with the greatest reserve I would put forth the conclusion in the form of the question ; may not the arterial blood play a similar part in the formation of the hepatic sugar, that it does in the formation of bile ?

M. Andral, who was present, cited a fact that he had observed, in the course of his practice, a case which afforded results in perfect accordance with those obtained by M. Oré in the experiments above reported. A patient whose morbid manifestations led him to suspect the existence of obliteration of the vena porta, (an obliteration which in reality existed in the most absolute manner, as was verified by the autopsy,) not only did not present any symptoms indicative of a suspension of the biliary secretion, but furnished the proof that the glycogenic function still persisted, for this patient was diabetic.

ART. VI. *Ligature of the Œsophagus.* Translated from the French:  
By M. MORTON DOWLER, M. D.

*L'Union Médicale*, September 4, 1856. *Academy of Medicine September 2.* *Ligature of the Œsophagus.* M. Depaul read a note on this subject, addressed to the Academy by M. L. Orfila.

Since the 19th of last month, said M. Orfila, I have performed the ligation of the œsophagus on eighteen dogs, and I have observed that the animals succumbed sometimes after this operation. In these cases the death ought, in my opinion, to be attributed to the action of the white, spumous, adhesive liquid which accumulates in the pharynx, and at the entrance of the larynx, and which penetrates even into the trachea and bronchial tubes. This view has already been put forth by M. Follin and by M. Sée. The following are the observations on which my convictions are founded:

1. When the ligation has been properly effected, the dogs that do not have a flow of saliva, do not die when even the constricting ligature remains applied on the œsophagus during twenty-four hours.

2. The dogs in which the saliva flows, and that cannot disembarass themselves of it, die at a period more or less remote from the operation, after having presented the most characteristic symptoms of dyspnoea and suffocation, the respiration being short, panting, with cough and agitation, which is sometimes convulsive. As to the efforts at vomiting, they have no other object but the expulsion of this liquid, for the salivant animals are the only ones in which these efforts are seen.

If at the end of two, four or six hours after the operation, we kill (by the section of the rachidian bulb) the animals which secrete this spumous and adhesive saliva without the power of disembarassing themselves of it, we shall find this liquid perfectly obvious, stopping up the larynx, and having even penetrated into the trachea and bronchi.

On the other hand, if we leave the animal to die, the autopsy discloses only more or less extended lesions of the respiratory apparatus; engorgement, congestion, inflammation; very black blood, filling principally the right side of the heart and the venous system; the bronchi often containing a spumous and sanguinolent fluid. The liver is, in certain cases, congested, whilst the digestive tube never presents any other than insignificant lesions.

3. And lastly, when an opening is made in the œsophagus above the ligature, the saliva escapes by this opening, and the animal presents only symptoms of depression, and lives at least three days, and often as long as seven or eight days, after the operation.

We may here recall the fact that in all his experiments, M. Orfila made this opening in order to introduce the substances of which he



wished to study the action. Now, from the foregoing it results that this condition is very important, and consequently the contradictory researches hitherto conducted *without having taken this circumstance into account*, in no way invalidate the results obtained by M. Orfila, and in no respect weaken the conclusions of other experimenters who have operated as he has done, and conformed to his precepts.

ART. VII. *Tableau of the Use of Iodine in Scrofula, and the Symptoms or Maladies which may complicate themselves with that Disease.*  
By M. MARTIN LAUZER. Translated from the *Revue Thérapeutique*, for August, 1856: By M. MORTON DOWLER, M. D.

THE iodated preparations consist of such as are furnished us by the hand of nature, and those which are artificially compounded. The former are more particularly applicable to all cases of scrofula, whilst the latter are more specially adapted to the various forms of complications of the disease. The first class we comprehend under the head of general treatment, the second under the head of the distinctive states in which the remedy is indicated.

The iodine treatment of scrofula will most certainly fail, if it be not seconded by proper hygienic measures, and it is even often absolutely necessary that there should be a concurrent tonic course of treatment by means of chalybeates and bitters.

The following are the precautionary rules to which the patient should be subjected, when thus under treatment by iodine:

1. Let the patient be removed from all the causes which are calculated to give birth to scrofula, by giving him change of air, and let him be placed in a situation in which the air is pure and dry.

2. Let him be required to take exercise, and to move about in the open air, and also devote himself to rural occupations.

3. Let him be nourished with a substantial and invigorating diet, consisting of animal food, boiled or roasted, fish, eggs, wine, fresh legumes cooked, vegetables, etc. Let pastries, feculas, dry legumes, and even milk diet be forbidden, although there be no inflammation of the digestive passages.

4. Let woolen clothes be worn next to the skin, especially in cold and humid weather.

5. Let baths be employed, either simple or medicated, with such agents as sea-salt, iodine, soap, alkaline salts, mucilaginous or gelatinous materials; cold baths of fresh or sea-water, unless there is a complication of pulmonary tubercles.

6. Let dry frictions be applied to the skin, with flannel impregnated with aromatic, excitant, or alcoholic vapors.

7. Let the iodine treatment be preceded by vomipurgatives, with a view of disembarassing the alimentary canal.

It is very rarely that the ferruginous preparations, among which the iodide of iron holds the first rank, are not also indicated in these cases. Amongst the bitters which are applicable, we may name gentian, and we may give cinchona under the form of extract, draught, syrup or wine. The walnut leaves, so much extolled by Jurine, Borson and Négrier, are employed in the form of either decoction, extract or syrup. The peel of the nuts are also used, both internally and externally. The hop, anti-scorbutic beer, chamomile, sage, rosemary, and, in general, all of the mint tribe is proper to be administered in the form of drinks. To conclude, the last series of bitter agents applicable in these cases is the resinous, at the head of which we may place tar-water.

This assemblage of curative means constitutes an array of remedies the employment of which alone is sufficient for the cure of a great number of cases. But the addition of one or several of the preparations of iodine greatly aids in the cure, and renders it more prompt.

The preparations employed in scrofula, and the formulæ of which iodine enters into the composition, constitute a special series of remedies, and one of the greatest importance.

*Cod-liver Oil.*—It is sufficient, according to Bazin, that we administer this most extensively employed agent in doses of five or six tablespoonfuls daily. The medium dose is two tablespoonfuls daily.

The brown oil is the most highly charged with the iodated material, and is the most efficacious. It has been proposed to substitute in its place preparations according to the following formulæ:

*Bromo-Iodated Cod-liver Oil.* R. Cod-liver oil, ℥xvi; Iodide of potassium or of iron, gr. iv—viii. Dose: from one to five tablespoonfuls daily.—(*Dr. Lunier.*)

*Iodated Oil.* (*Marchal, de Calvi.*) R. Oil of sweet almonds, ℥v; Iodine, gr. xv. Dose: Let one-fourth of a drachm be made into a gum emulsion, and given by tablespoonfuls.

*Iodated Oil.* (*Berthé.*) R. Sweet almond oil, ℥xxxii; Iodine, gr. lxxv.

*Iodo-phosphorated Oil.* (*Berthé.*) R. Sweet almond oil, ℥xxxii; Iodine, gr. lxxv. Mix this with equal parts of phosphorated oil, prepared in the same proportion as the iodated oil.

We may, in the next place, cite the following iodated formulæ of Lugol:

*Iodated Water.*—

	No. 1.	No. 2.	No. 3.	} grs.
R. Iodine,	$\frac{3}{8}$ ,	$\frac{3}{4}$ ,	$1\frac{1}{8}$	
Iodide of potassium,	$1\frac{1}{8}$ ,	$1\frac{1}{2}$ ,	$1\frac{1}{2}$	

Distilled water, ℥xvi.

The first two are given sugared to children in teaspoonfuls, and used in the course of a day.

*Iodated Solution.* R. Iodine, gr. xviii; Iodide of potassium, gr. xxxvi; distilled water, ℥vss. Dose: Let there be given, to adults, six drops three times a day before eating; to children two drops twice a day in sweetened water.

The medicine may be increased in dose, in cases of adults, to thirty-six drops; and in cases of children, to ten drops daily.

We here give the various preparations of Iodine which are administered internally, under the forms of *solutions, draughts, pastes, powders, syrups, tinctures*; given in the form of drops or by spoonfuls, *pills, pastils, lotions, wines*, etc., which we systematically arrange in order to facilitate the researches of the physician.

#### DRINKS.

*Gaseous Iodated Water of Mailhe.* R. Bicarbonate of soda, ℥ss; iodide of potassium, gr. vii ss; tartaric acid, gr. viii; water, ℥ix. Dose: To be taken during the day.

*Gaseous ferro-iodated Water of Mailhe.* R. Bicarbonate of soda, ℥ss; tartrate of iron and potassa, gr. viiss; iodide of potassium, gr. viiss; tartaric acid, gr. lxxv; water, ℥x. This quantity may be taken twice a day at a dose.

*Iodated Drink of Boinet.* R. Water, ℥xxxii; iodide of potassium, ℥ss. Let six dessert spoonfuls be given three times a day.

The iodated beer is prepared in the same proportions as the iodated water.

The *gaseous iodated lemonade of Mailhe* is prepared by adding to his *gaseous iodated water* ℥vi of lemon syrup, and adding simple syrup.

*Natural Iodated Mineral Waters.* De Salins, France (Jura); Salies, (Basses-Pyrénées); Caunterets, Saint Sauveur, Barèges, (Hautes-Pyrénées); Plombières, (Vosges); Evaux, (Creuse); Heilbronn and Kissengen, (Bavaria); Staten-hausen, (Westphalia); Hamburg and Nauheim, (duchy of Hesse); Kreutznoch, (Prussia); Aix and Challes, (Savoy); Sales and Castelnova, (Piedmont); Montecchia, (Naples); Saragossa, (Spain); Saratoga, (United States.)



*Iodated Solutions.* (MAGENDIE, FOY, CADET, PIERQUIN, SOUBEIRAN.)  
R. Iodide of potassium, 3ss; distilled water, 3i.

*Solution of Iodine.* (COINET.) R. Iodine, gr. viiss; iodide of potassium, 3ss; distilled water, 3i. Dose: Six drops three times a day in a ptisan.

*Iodo-bromated Solution.* (LUNIER.) R. Iodide of potassium, gr. xviii-xxvii; extract of gentian, gr. xv; water, 3xx. Dose: From one to three tablespoonfuls daily, at meals.

*Iodated Solution.* (PAYAN.) R. Iodide of potassium, 3iv; distilled water, 3xvi. Dose: A tablespoonful daily.

IODATED PILLS.

*Pills of Iodide of Potassium.* (BOINET.) R. Iodide of Potassium, gr. xlv; powdered althæa, gr. xlv; syrup, a sufficient quantity; and make one hundred pills, which are to be taken in five days.

*Pills of Iodide of Potassium.* (PIERQUIN.) R. Iodide of potassium, 3ss; distilled water, 3vss; crumb of biscuit, a sufficient quantity; make three hundred pills.

*Bromo-iodated Pills.* (LUNIER.) R. Iodide of potassium, gr. xviii; bromide of potassium, gr. xii; powder and syrup of gentian, q. s.; make forty pills, of which take one three times a day.

*Anti-scorfulous Pills.* (VOGHT.) R. Iodide of potassium, gr. xiiiss; burnt sponge, 3v; extract of bitter-sweet, 3v; distilled water, q. s.; make one hundred and eighty pills; take six three times a day.

*Anti-scorfulous Pills of BAILLY.* R. Calcined sponge, 3ss; sulphate of potash, gr. xv; balm of sulphur, gtt. x; simple syrup, q. s.; make forty pills; take from two to four daily.

*Iodine Pills of HANNON.* R. Iodine, gr. iss; crumb of bread, q. s.; make twenty pills; take from one to four daily, before eating.

*Pills of Iodoform.* (BOUCHARDAT.) R. Iodoform, 3ss; extract of absynth, q. s.; make into thirty-six pills, three to be taken daily.

PASTILLES OF IODINE.

*Pastils of Iodoform.* (BOUCHARDAT.) R. Iodoform, 3i; white sugar, 3xviii; essence of mint, gtt. xv; mucilage of gum tragacanth, q. s.; make into eighty pastils; one to six to be taken daily.

*Iodide of Potassium of GIORDANT.* R. Iodide of potassium, gr. li; sugar, 3xxss; mucilage of gum tragacanth, q. s.; make pastils of gr. ix each.

*Pastils of Iodated Mocha Coffee.* (PIERQUIN.) R. Iodide of potassium, 3i; porphyryzed Mocha coffee, gr. xv; powdered sugar, 3viiiss; mucilage of gum tragacanth, q. s.; make into three hundred pastils.

*Pastils of Iodide of Iron.* R. Iodine 3iv; porphyryzed iron, 3ii; water, 3viii; heat in a water-bath to decoloration, filter and add sugar,

℥xviii<sup>ss</sup>; essence of mint ℥i; make into pastils of gr. vi each; six to be taken daily.

#### IODINE PASTES.

*Sthenic Paste of HANNOX.* R. Lichen paste, ℥i; iodated oil, gr. iss.

#### IODINE POWDERS.

*Saccharated Powders of Iodine.* R. Iodine, gr. xv; powdered sugar, 3v; make into twenty papers, and take from one to four daily.

*Powder of Sency.* (ARNAUD DE VILLENEUVE.) R. Sponge carbonized in a close vessel, zoster root, black pepper, long pepper, ginger, canella pyrethrum, cuttle-fish bone, sal ammoniac, of each equal parts. Dose: Take from three to five grains, daily in white wine.

*Iodated Powder of BAINET.* R. Flowers of sulphur, gr. xv.; iodine, ℥i. Give gr.  $\frac{3}{4}$  to children, and gr. iss to adults, mixed with powdered liquorice.

*Intraleptic Powder.* (MOJSISOVIES.) R. Iodine, gr. ss; lycopodium, gr. iss. Let it be given in three doses during the course of the day.

#### SYRUPS.

*Syrup of Iodide of Potassium* (CADET.) R. Iodide of potassium, ℥i; simple syrup, ℥xvi.

*Iodated Syrup.* (HENRY.) R. Tincture of iodine, 3v; simple syrup, ℥ix<sup>ss</sup>.

*Depurative Syrup of BOCHET.* R. Sarsaparilla, sassafras, China-root, guaiacum, senna, of each ℥xxxii; boil twice in a sufficient quantity of water, mix the two decoctions, and reduce by boiling to two gallons, and add of sugar lbx; honey, lbx; tincture of iodine, ℥iiss; make into a syrup.

*Depurative Syrup of BAINET.* R. Syrup of gentian, syrup of cinchona, syrup of orange flowers, of each ℥xvi; iodide of potassium, ℥ss; ammoniacal tartrate of iron, 3v. Dose: Take from three to six tablespoonfuls daily.

*Depurative Syrup of DERRAULT.* R. Iodide of potassium, 3v; water, 3x; simple syrup, ℥xxiv; syrup of orange flowers, ℥vi. From one to four tablespoonfuls daily, in a ptisan.

*Iodated Syrup of Horse-Radish.* (DERRAULT.) R. Iodide of potassium, gr. xv; compound syrup of horse-radish, ℥xvi. Give from two to four teaspoonfuls to children in infusion of hops, daily.

*Iodated Syrup.* (BAINET.) R. Tincture of iodine, gtt. x; the preceding syrup, ℥i.

*Sthenic Syrup of HANNOX.* R. Syrup of gum, ℥iv<sup>ss</sup>; syrup of the balsam of tolu, ℥iss; alcohol, ℥iiss; essence of lavender, gtt. v; essence of rosemary, gtt. v. Dose: Take from two to four dessert spoonfuls before eating, adding a drop of iodated oil to each spoonful.

## TINCTURES.

*From the Codex.* Iodine,  $\mathfrak{z}\text{i}$ ; alcohol,  $\mathfrak{z}\text{xii}$ . Take from three to twenty drops three times a day in a ptisan.

*Ætherial Tincture of Iodine.* (MAGENDIE.) R. Iodine, gr. v; sulphuric ether,  $\mathfrak{z}\text{i}$ . Take from five to ten drops daily in a ptisan.

## DRAUGHTS.

*Resolvent Potion of COINDET.* R. Ononis spinosa,  $\mathfrak{z}\text{i}$ ; water, q. s.; make  $\mathfrak{z}\text{vss}$  of decoction and add; solution of Coindet, gtt xl; simple syrup  $\mathfrak{z}\text{i}$ .

*Stimulant Potion of RADIUS.* R. Iodide of potassium, gr iss; sulphate of magnesia,  $\mathfrak{z}\text{ss}$ ; tartar emetic, gr ii; water,  $\mathfrak{z}\text{vi}$ .

*Stimulant Potion of DORVAULT.* R. Iodide of potassium, gr. i; distilled water,  $\mathfrak{z}\text{iv}$ ; syrup of orange peel,  $\mathfrak{z}\text{vii}$ . We may substitute for this syrup either the syrup of orange flowers, or those of mint, tolu, gum, or maiden-hair.

*Cod-liver Oil Draught.* R. Cod-liver oil,  $\mathfrak{z}\text{viiiiss}$ ; water,  $\mathfrak{z}\text{iv}$ ; laurel water,  $\mathfrak{z}\text{ii}$ ; gum arabic,  $\mathfrak{z}\text{iv}$ ; syrup of orange flowers,  $\mathfrak{z}\text{xiiss}$ .—To be taken from hour to hour in tablespoonfuls.

## WINES.

*Iodated Wine.* Iodide of potassium, gr. lxxv; white wine,  $\mathfrak{z}\text{xvi}$ . From one to three tablespoonfuls daily.

## IODATED SALT.

*Iodo-bromated Salt.* (LUNIER.) R. Iodide of iron, gr iii; bromide of potassium, gr. iii; kitchen salt,  $\mathfrak{z}\text{xvi}$ . Preserve in a close vessel; take from  $\mathfrak{z}\text{iiiss}$  to  $\mathfrak{z}\text{v}$  daily.

## HONIES.

*Iodated Honey of HANNON.* R. Narbonne honey,  $\mathfrak{z}\text{x}$ ; iodine, gr. iss. R. Olive oil,  $\mathfrak{z}\text{iiiss}$ ; iodine, gr. xv. Let a dessert spoonful of the honey be mixed with one drop of the above oil, and from one to four such doses be given daily.

## SOAPS.

*Soap of the Iodide of Potassium.* (BERAL.) R. Iodide of potassium, water, of each  $\mathfrak{z}\text{v}$ ; almond soap in its unfinished state,  $\mathfrak{z}\text{xvi}$ ; make into pills of four grains each, containing 1-6 of a grain of the iodide of potassium.

*Iodated Butter.* (Trousseau.) R. Fresh butter,  $\mathfrak{z}\text{ss}$ ; iodide of potassium, gr. viiiss; bromide of potassium, gr. iiiss; kitchen salt,  $\mathfrak{z}\text{ss}$ ; to be taken in doses spread on bread.

## IODINE INJECTIONS.

By means of injections or baths, we may, in cases in which iodine cannot be administered by the mouth, meet the indications presented in the case.



*Iodated Lavement of CADET.* R. Water, ℥ivss; gum arabic, ℥ss; tincture of iodine, gtt. v.

*Iodated Lavement of BOINET.* R. Distilled water, ℥viiss; iodide of potassium, gr. xv.

*Iodated Baths of LUGOL.* For a bath for a child: R. Iodine gr. xlv-xe; iodide of potassium, ℥iss-iiss, distilled water, ℥xviii. For an adult: R. Iodine, ℥ii-iv; iodide of potassium, ℥iv-ix; distilled water, ℥xviii.

*Iodated Bath of BOINET.* Saturated decoction of marine plants, or cinders of varec, with iodide of potassium added. For general baths, *pedeluvie* and *manuluvie*.

*Iodurated Bath of DORVAULT.* R: Iodide of potassium, ℥iss; distilled water, ℥xiiiss.

*Bath of Ioduretted Iodide of Potassium.* R. Iodine, ℥iiss; iodide of potassium, ℥x; distilled water, ℥xiiiss.

Certain complications of scrofula require, in addition, certain special medications appropriate to each, which we shall point out in a future number.

[To be concluded in the next Number.—Trans.]

**ART. VIII.—Iodoform.** Translated from the French, by M. MORTON DOWLER, M. D., New Orleans.

In the Academy of Medicine, September 2, 1856, (*L'Union Médicale*), M. Moreton, in his own name, and in that of M. Em. Humbert, read a paper entitled: *Chemical, Physiological, and Therapeutical Researches on Iodoform*. This body, discovered by Sérullas, and which M. Dumas and M. Bouchardat have, in a special manner, brought into notice, presents itself in a solid state under the form of pearly spangles, of a sulphur yellow, friable, soft to the touch, of an aromatic and very persistent odor, containing more than nine-tenths of its weight of Iodine, its taste sweet, and non-corrosive. Administered to dogs, it kills in smaller doses than does iodine itself, after having given rise to a depression more or less marked, vomiting rarely occurring. The depression is succeeded by a period of excitation, with convulsions, contortions, etc. Iodoform is entirely void of local irritant action; and it does not give rise to the slightest degree of vascularization of the gastric and intestinal mucous membranes. As to the therapeutic properties of iodoform, the authors have set them forth in the following propositions:

1. Owing to the great quantity of iodine contained in iodoform, this agent is capable of supplying the place of iodine and the iodides, in all of the circumstances in which these agents are indicated.

2. The absorption of iodoform is effected with the greatest facility—the iodine, indeed, being combined with hydrogen and carbon, constituting, as we may say, an organic compound.

3. Iodoform, applied therapeutically, possesses over the other iodics, the advantage of not determining any local irritation, and of not producing any of the untoward effects from which we are, in certain cases, forced to suspend the employment of these remedies.

4. Besides the properties which it possesses in common with iodine, it is endowed with special virtues, calming the pain in certain neuralgic affections, and determines a certain local and partial anæsthesia of the rectum, when introduced into that organ.

5. The doses in which it may be administered, are 5, 10, 15, 25, 50 *centigrammes*, (five-sixths to eight and a third grains,) in a day. M. Bouchardat has pushed the remedy to 60 *centigrammes* (ten grains) daily.

6. The principal diseases in which we have employed it with advantage, are the following: endemic goitre, scrofulous disease, rachitism, syphilis, certain affections of the neck of the bladder and of the prostate, and certain neuralgias. Doubtlessly, in the hands of Professor Piorry, it would have all the efficacy of iodine in phthisis pulmonalis.

7. And, lastly, iodoform conforms itself with the greatest facility to the most important pharmaceutic formalization.

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ART. IX.—*On the Employment of Chloroform in Obstetrical Practice.*  
By Professor SCANZONI. (*L'Union Médicale*, July, 1856. *Beitrage zum geburts*, t. ii. 1855, *et monatschrift für geburts*.) Translated from the French, by M. MORTON DOWLER, M. D., New Orleans.

1. In labors which are altogether normal, we must abstain from the use of chloroform. The contractions of the womb become modified after a complete narcotization, and become more feeble, and occur at longer intervals, though this change is only transient. Anæsthesia requires *large* doses of chloroform, which must be referred to the fact of the diminished depth, and often interrupted respiration, of the woman, to the diminished susceptibility of the nervous system to narcotics generally, and, perhaps, to the hydroæmic quality of the blood. These causes explain, also, the innocuity of this agent in cases of pregnant women.

2. We employ it in the following untoward accompaniments to parturition : *a*, in cases of labors which are too rapid in their progress ; *b*, in cases accompanied by cramps after the failure of other means, as opium, blood-letting, etc. ; *c*, in cases of spasmodic contractions of the womb, especially of the external orifice. But as this state is often accompanied by a relaxation of the body and fundus of the organ, the anæsthetic state ought never to be prolonged more than half an hour, at the longest. The contractions which retard the expulsion of the placenta are readily removed, but their removal requires some precaution, from the facility thereby given to hæmorrhage ; *d*, in cases of tetanic spasms of the uterus ; *e*, in cases of premature uterine contractions, thus arresting impending abortion ; *f*, in cases of eclamsia parturientium, in which redoubtable complication, Prof. S. has used it in eight cases, and he regards this agent as one of the most certain, though not infallible, remedies in warding off the paroxysms.

In some cases, the anæsthetic effects were with difficulty obtained, the best period for success being on the appearance of the first symptoms of the paroxysm ; *g*, in cases of excessively painful contractions ; *h*, in cases of inordinately severe after-pains. One of M. Seanzoni's cases, however, shows the necessity of precaution. The child having taken the mother's breast, three hours after the chloroformization, fell into a profound sleep of eight hours' duration, and was morbidly affected during two days.

3. Chloroform is always indicated when an obstetrical operation is to be performed, however inconsiderable the operation may be.

To the above remarks of Prof. S., the following, taken from the *Br. and For. Med. Chir. Rev.*, will be added :

CHLOROFORM.—Mr. Syme, in a clinical lecture, directs attention to the importance of watching the respiration during the administration of chloroform vapor ; regarding the indications afforded by the breathing as of greater value than those furnished by the pulse. On respiration becoming difficult, he directs that the mouth should be opened, and the tip of the tongue being seized with artery forceps, that it should be well drawn forwards.

Dr. Snow has no hesitation in administering it, even in patients with fatty degeneration of the heart, believing that it is more likely to save life in such cases under operation than to destroy it, by preventing, not only the straining and holding the breath, which would induce an over-distended state of the right cavities of the heart, but also direct the sedative operation of pain. He has given it to a number of persons with all the symptoms of fatty heart. His experience also leads him to overlook the presence of chronic disease of the respiratory organs. He has given it without any ill effects in many cases where more or less paralysis remained from previous apoplexy, where patients have been reduced, by various causes, to a state of extreme debility, and in excessive ex-



haustion, in strangulated hernia, or compound fractures. He has also administered it to infants from ten days to three weeks old, and to one patient nearly ninety.

**CHOREA.**—*Inhalation of Chloroform.*—According to Dr. Gery, chloroform inhalations have been used with advantage at the Hôp. des Enfants in severe cases, where the violence of the movements have been beyond the control of opium or belladonna. It has been found at once to calm the movements and produce sleep, and in this way time has been gained for the employment of other remedies. On the first application of the vapor, the intensity of the movements is often greatly increased, but a calm succeeds as the inhalation is continued. Sound sleep thus induced, lasts in children for ten or fifteen minutes, or even half an hour, and no ill-effects have been observed to follow. The usual precautions, however, which are taken in the instance of adults, are necessary to be observed, such as insuring that the stomach be empty, removing all obstacles to the respiratory movements, and watching the respiration and pulse, etc. The usual quantity administered has been ten to twenty grammes.

Dr. Bouchard relates a case of a girl, in which severe chorea had lasted twenty-one days. She was subjected to the influence of chloroform twenty-seven times in fourteen days—at first twice, then three times, and lastly once a day, at the end of which time she was cured.

**CONVULSIONS.**—*Chloroform Inhalations.*—M. Marotte relates the case of an infant, eleven months old, suffering from convulsions, with spasms of the glottis, during dentition. Chloroform was very cautiously administered, with immediate relief; and in half an hour sleep was procured, and kept up by occasional respiration of the vapor for two hours, and then natural sleep ensued. Several relapses occurred—decreasing, however, in severity—each of which was treated in a similar manner; and, altogether, forty-five grammes of chloroform were expended.

**LEAD COLIC.**—*Chloroform.*—M. Aran, after using chloroform in lead colic, both externally and internally, for four years, now repeats an opinion formerly expressed of its superiority over all other methods of treatment. At the same time, he modifies some of his former statements. He regards the internal use of the medicine as the basis of the treatment, whilst he considers the application of it externally as only indispensable during the first days, and in the most severe cases. His observations have also taught him that it is impossible to lay down precisely the maximum dose, which must depend on the intensity of the pain, &c. It may be necessary to give as much as one hundred or three hundred drops (four to twelve grammes) in twenty-four hours, while sixty drops may suffice in slight cases. As the effects of chloroform rapidly pass away, the patient must be kept continually under its influence for a certain number of days by repeated small doses, given by the mouth or by enema. He applies the chloroform topically, by dropping it on a flue and dry compress, to an amount varying with the degree of pain, (e. g., two to four grammes,) and after placing this upon the abdomen, it is covered with some dry compresses. It produces its effect in from one to five minutes. He gives the chloroform internally suspended in water by tragacanth. The lavement contains from thirty to fifty drops, similarly suspended. The topical application is rarely of any use beyond

the second day. Reducing the dose, he continues the medicine in lavesment, as a precaution, when the case has been severe, up to the eighth or twelfth day. He founds his recommendation on the results of twenty-one cases.

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**ART. X.**—1. *Chronic Poisoning with Nitras Argenti, with black pigmentation of the skin*: By Dr. SCHÖNHEIT, of Güssing. 2. *Effects of Nicotine*. 3. *Ophthalmia*: By Dr. FRÖBELIUS, of St. Petersburg. From the *Österreichische Zeitschrift für Practische Heilkunde*. (edited by Drs. Knolz and Preyess, of Vienna.) Translated from the German by RUDOLPH TURNEY, Apothecary, New Orleans, for the N. O. Med. and Surg. Jour.

1. *Chronic Poisoning with Nitras Argenti, with black pigmentation of the skin*: By Dr. Schönheit, of Güssing.—A woman 25 years of age, mother of 3 children, complaining of debility and temporarily having symptoms of colic and vertigo, observed during two months, first on the roots of the nails, then in the face and on the hands, dark colored spots, which extended more and more, and finally assumed a black-grey color. Dr. Schönheit records the following *status præsens*: On both cheeks, on the nail-roots and in the middle of the forehead, that broad uniform spots were visible, of a dark gray color; the *tunica sclerotica* tinged of a slate-color; the lips, gums, and the palate blueish-gray, the nail-roots of the fingers, especially around the *lunula*, dark-blue; the same color was visible on both hands, and on the *mammæ*; the feet, spine, and abdomen being of a normal color, but transmitting a dark [subcutaneous] pigmentation. She complained also of dyspepsia, colic-pains, and debility.

She had been healthy in her infancy and up to her 10th year, when she became affected with *tinea capitis*, which her mother cured by different remedies. Soon after, she lost her accustomed cheerfulness and healthy color. She had epileptic fits, sometimes at short, and then at longer intervals, which finally ceased upon the appearance of the *catamenia* in her 18th year. The menses were scanty and accompanied with considerable pain, and colic.

She married at her 20th year, and soon became pregnant. Already in her first pregnancy, particularly in the latter months, she suffered now and then from convulsions, with unconsciousness. The *actus nascenti* which was natural and expeditious, was accompanied by violent agitation. Since that period, the fits appeared frequently, though irregularly, but the paroxysms have been milder and shorter, and her consciousness has returned sooner than formerly.

Besides other remedies, pills of *argent. nitrat., extr., conii maculat.* and *pulv. liquiri*, had been ordered in such proportion that each pill contained one-tenth of a grain of *argent. nitrat.*, with the direction to take 3 to 6 pills per day ; but she wilfully increased the dose up to 20 pills per day ; had the pills frequently repeated, so that in the period of 4 months she had taken one drachm and a half of the nitrate of silver.

The paroxysms now appeared more rarely, and, for the last 2 months she has been free from them ; though we are not assured of their total disappearance. But now appeared the variegated pigmentation of the skin.

The ætiologic proof of the poisoning in this case is to be looked for in the long use of this silver preparation, and the diagnosis is confirmed by the characteristic spots pertaining to the action of the lunar caustic. The removal of the *epidermis* by applying a *vesicatorium* on the chest, showed not only the extracted fluid of a somewhat blackish-gray color, but even the lower *strata* covered with dark spots, which differed from the surrounding parts, having a somewhat lighter hue.

The farther use of the medicament has been prohibited, and, in order to effect resorption and elimination of the pigment, rhubarb, and Iodide of potassium have been ordered, with a light solution of corrosive sublimate and tinct. benzoës, externally.

In regard to the subsequent result, Dr. Schönheit could not give any further explanation. (*Zeitschr. f. Natur. w. Heilk. in Ungarn*, 1855. II. N.)

2. *Effects of Nicotine.*—In regard to cases of poisoning with Nicotine and its physiological effects, Mr. Van Praag has made numerous experiments on animals. This poison produces hurried respiration, with subsequent retardation. In most cases there is at first a peculiar whisper in breathing, a consequence of the narrowing of the air passages, the muscles of which like the cases of those whose muscular apparatus is attacked with a tetanic cramp. The pulse becomes at first quick, then slow, sometimes irregular. In the muscles there set in violent and frequent alternating tonic and clonic spasms, causing a peculiar eye-spasm ; while the eye is drawn outward and upward, the *membrana nictitans* is drawn over it. These cramps are followed by a marked state of weakness with trembling of parts of the muscular apparatus or by a lively shaking of the whole body. In cases, which run their course quickly, the last named symptoms often occur alone. The influence upon the motor and sensitive nerves is very different, sometimes producing pain, and at others none, sometimes only a decrease of sensibility, while often there is a perfect anaesthesia, and often again, not the slightest change of sensibility. Poisoning with Nicotine often produces saliva-



tion. In cases wherein recovery takes place, free vomiting and purging occur.

The dose of Nicotine varies with the mode of its administration and individual idiosyncrasy. The dose which is unattended with danger to man is not yet ascertained. Half a grain will not act fatally in any case.

The physiological effect of Nicotine at first, is, excitant, then lowering to the respiration, as well as to the circulation, and depressing also to the nervous system. At the commencement of its action there is increased excitement of the circulation of the blood, accelerated breathing, and super-excitation of the muscles, even by a very small dose, whereupon a general sinking of animal and organic life follows.

In chronic *dermatitis* this agent might, perhaps, be appropriately applied.

The salts of Nicotine which are more soluble and less liable to change, should be used in preference to the pure Nicotine itself.—(*Virchow. Arch. für pathologische Anat. u. Physiol. VIII. Heft 1. Berlin.*)

### 3. *Ophthalmia Neonatorum and Ophthalmia Purulenta of Nurses and their Abortive Treatment.*

W. Fräbelius, physician of the Foundling Hospital at St. Petersburg publishes in his Report on this establishment, the statistics and therapeutic results of that scourge among foundlings and nurses, namely, ophthalmia, which unfortunately attacks a large number of these classes.

During the period from the first of September, 1848, up to first of September, 1850, there were 803 foundlings admitted into this institution, afflicted with *ophthalmia neonator.*; namely, 417 boys and 386 girls. The report shows that, as heretofore, the majority of cases are among the boys. The number of eye-diseased has been near 7 per cent. of the whole admitted into the house. The largest number of the attacks was amongst the children from 4 to 8 days old; from the 8th up to the 14th day, the proportion was still great; but the decline was rapid in the third week. The duration of the disease was generally from 14 to 30 days. Ten cases appeared in the above named 2 years which were perfectly cured in 48 hours; the longest term was 3 months. The average duration of the disease was 18 days.

Out of these 803 patients 778 were admitted during the inflammatory period of the malady. Of this number 34 had *inflammatio conjunctio palpebrarum* without photophobia and blepharospasmus; 641 had *inflamm. conjunct. palpebr.* with photophobia and blepharospasmus; and 103 had *inflamm. conj. palp. scleroticæ et corneæ*, with photophobia and blepharospasmus; altogether 778.

Among these patients the *sequelæ* or secondary affections were developed in the following ratio : (1 to 5 being most frequent, 6 to 9 rare) 1, *macula et nebula corneæ* ; 2, *keratomalacia* ; 3, *ulcera corneæ perforantia* ; 4, *granulationes sarcinatosæ conj. palpebr. utr.* ; 5, *cicatrix leucomatosa cum synechia partiali* ; 6, *atrophia bulbi* ; 7, *ulcera corneæ superficialia* ; 8, *staphyloma corneæ partiali cum synechia* ; 9, *ectropia palpebr. super.*

In relation to therapeutics, the abortive treatment in the above cases of ophthalmia, showed particularly favorable results. This treatment consists of 4 several procedures : 1st, purifying the eye ; 2d, dropping into the eye a solution of *argent. nitr. crist.* ; 3, purifying the eye again from the coagulations, which will take place by the use of the silver ; and 4th, dropping into the eye a few drops of almond oil.

The purification of the eye should be performed by the *eye-douche*.—The apparatus for this purpose is set upon the table, which is constructed for douching children, the table being covered with oil cloth and provided with elevated or raised edges ; so, that the child lies between the *douche apparatus* and the physician. The physician takes the elastic pipe in his right hand and lifts the upper eye-lid of the child with his left, while the assistant draws the lower eye-lid down. Then the physician directs the elastic pipe upon the eyes of the child with its face averted from the physician, in order that the water may enter side-wise. The eye which is situated highest should always be the first washed and afterwards the other. After the matter is removed by means of this current of water the physician takes a soft rag and dries the eye carefully, whereupon the necessary eye-drops are applied, and the child is put to rest. When the *argent nitr.* is used, is it necessary to wash away a few minutes afterwards the white coagulated matter from the *conjunctiva palpebr.* and to introduce a drop of sweet almond oil. This is performed twice or thrice a day. As the luke-warm *douche* presents greater advantages than the cold, the first is applied, especially as it diminishes the eye-lid spasms ; so that if by a very severe eye-lid spasm, the eye could not be opened for purifying, it is only necessary to direct the luke-warm *douche* for a longer time upon the closed eye-lids when the opening soon afterwards will take place without any difficulty.

The application of the *argent nitr. cristalis*, is made in the following manner : It is used twice a day in the proportion of 4 grains to 1 ounce of water ; but when there are profuse emissions of matter, this article may be increased to 8 grains to 1 oz. water. In those cases, where, along with a considerable tumefaction of the eye-lids and an intense redness of the *conj. palbr.* with sub-conjunctival exudations, the thick yellowish and copious effusions of mucous being developed, 4 grs.

to 2 oz. is used, together with the *eye-douche*. In an inflammation of a less degree it is sufficient, once a day, to purify the eye for three times by the application of the lunar caustic. Nevertheless should these secretions of matter be excessively profuse and the eye-ball continually appear to be swimming in the mucus or pus, the 4 grain solution must be applied 3 times each day ; but if recovery do not soon take place, the 8 grain solution should be used. Should there be perfect fleshy granulations, a solution of 20 grains to 1 oz. of water must be applied upon the upraised eye-lid with a moistened small camel's hair pencil. The eye should be then washed and a drop of sweet almond oil be dropped into it.

In cases of a threatened extension of this eye disease to the *cornea* where the redness around it increases, the *belladonna* in drops or embrocation may be applied around the eye with great success.

The dropping into the eye the solution of the nitrate of silver always produces whitish, and sometimes pretty solid coagulations which result from the action of the *argent. nitr.* upon the pituitous tunic. It causes at first an increased secretion, but this soon decreases and disappears, leaving the inflamed conjunctiva of an intensely red color, free from all exudations, although covered with blennorrhœal pus. These coagulations, however, are to be distinguished particularly from the exudations of croupic ophthalmia, which very seldom attacks children, as the coagulations are always of a whitish color and very thin and only cover the deep reddened conjunctiva like a whitish gauze after the application of a light solution of the *nitrate*, while the croupic exudations are yellowish-gray, and much thicker and more solid and cover the *conjunctiva palpebr.* uniformly, and can by no means be washed away, but by a forced removal with the torn epithelium leaving behind a bloody spot on the conjunctiva.

The statistical report of the abortive treatment of eye diseases from the 1st of September, 1850, up to the 1st of September, 1852, shows that 1030 children afflicted with ophthalmia have been under treatment ; namely, 506 boys and 524 girls. The number of eye-diseased, which in these two years have been treated, amount to eight per cent. of the whole number of admissions. It is quite remarkable, that, while in the years previous to these mentioned there were nearly 80 per cent. of secondary, or after diseases, in the last only near 20 per cent. appeared, which favorable result is owing specially to the abortive system.

The aggravated severity of the *ophthalmia neonatorum* showed itself regularly in the latter part of autumn and in the summer ; and, exactly in these periods, also, the nurses take ill with the disease, which in the



other seasons of the year very seldom, and always with the proof of contagion, takes place. Since the adoption of the abortive system with *argent. nitr.* and the *op-douche* but a few aggravations of the disease took place, which, perhaps may be owing to the considerable reduction of blennorrhœal mucosity, the real carrier of the contagion.

*Statistic Report of nurses affected with ophthalmia purulenta*:—In the period from the 1st of Sept., 1846, up to the 1st of Sept., 1852, 345 nurses took ill, and 178 of them had, up to January, 1850, been under a antiphlogistic treatment; while from this time up, 167 had been under the abortive treatment. Among the first, 98 ranged from the age of 20 to 30 years, and 80 from 30 to 40 years. In regard to the duration of the disease, under the antiphlogistic derivative treatment, the shortest time was 3 days; the longest 4 months; and the average treatment required 20 days. 167 nurses were treated on the abortive plan, namely, 109 aged from 20 to 30 years, and 58 of from 30 to 40 years. Two-thirds of these patients, are consequently among the younger nurses. The duration of the disease under this treatment was, for the shortest, 3 days, for the longest 4 weeks, the average being 10 days, wherefore, the result of the Abortive treatment in *ophthalmia purul.* of the nurses deserves to be considered a splendid one.—(Med. Zeitschrift Russlands. 1855. Nos. 33, 34.)

ART. XI.—1. *Convulsions in Children Considered in an Ætiological Point of View.* 2. *Whooping-Cough.* Translated from the French, by M. MORTON DOWLER, M. D., New Orleans. (*L'Union Médicale*, July 22, 1856. *Journal für Kinderkrankheiten*, 1856, et *Annales Médicales de Flandre occid.*, Juillet, 1856.

I. Convulsions, it is known, are amongst the most frequent symptoms of the morbid affections of infancy. M. Tilner, of St. Petersburg, has made the different conditions by which convulsions are produced, a subject of special study, the chief of which he has found to be the following:

1. Convulsions proceeding from a morbid condition of the nervous system. In this category must be included all of the organic modifications of the brain—as congestion, inflammation and its consequences, softening, foreign bodies, exostoses, etc. These are the most frequent causes of the convulsive affections of infancy, and have but little that is favorable in the prognosis. Most of these affections, it is true, can only be considered as secondary, and as proceeding from a dyscrasia originating in derangements of the digestive organs, or from functional anomalies presenting themselves under the form of hyperæmiæ, and serous effu-

sions. The convulsive phenomena which these causes provoke, carry with them the character of legitimate cerebral convulsions, are either tonic or clonic in their character; but always accompanied with a loss of consciousness more or less marked, and in these diseases present themselves as a precursor of death—and they come on quickly, and sometimes periodically. The cerebral affection may extend itself to the spinal marrow, and then tetanic convulsions show themselves.

2. Convulsions which proceed from a pathological condition of the blood. The causes are : *a*, by toxicosis, from medicines and poisons, such as narcotics, directly producing cerebral convulsions, nux vomica, and strychnia, giving rise to tetanic symptoms, which have their starting point in the spinal marrow ; *b*, by toxicosis, from the maternal milk, vitiated by the use of spirituous liquors, or by violent mental emotions ; *c*, by modification of the blood in acute exanthemata. This cause often produces convulsions before the eruption of the exanthem, and convulsions may also occur before the accession of fever in intermittents ; *d*, by sanguineous modification in phlebitis, and especially in suppurative inflammation of the umbilical vessels, which, as is well known, may cause tetanic convulsive symptoms.

3. Convulsions take their origin in a morbid condition of the digestive organs. These are the most common kind of convulsions—and this we might readily anticipate, from the improper alimentation which we witness amongst both the rich and the poor. This cause becomes especially powerful at certain periods of infancy, such as those of dentition and weaning, and in the presence of worms in the intestinal canal.

4. Convulsions arise from certain conditions of the organs of respiration ; such as those which supervene in the latter stage of bronchitis and pneumonia, and they are, as is well known, often the result of whooping-cough and laryngismus stridulus.

5. Convulsions accompany diseases of the urinary organs, and we may here specially note the eclamptic symptoms which manifest themselves in children attacked with albuminuria.

6. Convulsions proceed from a morbid condition of the genital organs. The writer recalls to mind a case of convulsions, in a boy four years old, in consequence of the retention of a testicle in the inguinal canal.

7. Convulsions arise from diseases of the osseous system. Amongst these may be named rachitic malformation of the cranium.

In view of this aetiological tableau of the convulsions of infancy, we may offer the following reflections : The convulsions called cerebral, are amongst the most frequent of the affections of infancy. Nevertheless, the primitive cerebral affections are very rare in children. The convulsive manifestations are more often the consequence of the extension of

other acute and chronic diseases which manifest themselves symptomatically, producing ultimately convulsions at the precise period when the brain begins to participate in the morbid condition.

Next in the order of frequency, come convulsions from reflex action, which have their starting point in the intestinal canal, manifesting themselves ordinarily after the prolonged existence of intractable abdominal disease. Notwithstanding, the diseases of the digestive apparatus may also accompany secondary cerebral affections, which are in a condition to produce cerebral convulsions. The convulsions arising from a morbid condition of the spinal marrow, are rare, especially in the pure form ; for they appear more often as subsequent phenomena to cerebral spasms, than as an affection of the brain, propagated to the spinal marrow. It is to a morbid alteration of the blood that we are to look for the most frequent cause of tetanic spasms, though the latter may have their origin under certain climatic circumstances.

II.—*On the Seat and Nature of Whooping-Cough.* (*Gazette Hebdomadaire de Médecine et de Chirurgie*, of August 22, 1856. *Academy of Sciences.*)

M. BEAU has satisfied himself, by numerous anatomical investigations, that whooping-cough is an inflammation of the mucous membrane which covers the supra-glottidian region of the larynx ; that is to say, the narrow zone which is situated between the superior orifice of the organ, and the superior vocal cord. When the muco-purulent product, secreted by the inflamed membrane, comes in contact with the glottis, it determines the production of suffocative symptoms, similar to those which are experienced when any one has, as is said in popular language, *swallowed the wrong way*. All at once the glottis is closed, and there results, from this, an acute crowing inspiration, which is followed by the violent paroxysmal and jerking cough, which constitutes expiration; and this cough causes the expulsion of a considerable quantity of pituitous liquid to be cotemporaneously secreted. The muco-purulent matter which has come in contact with the glottis is the cause of these symptoms, and its tenacity and adhesiveness causes it to be with difficulty expelled.

The phlegmasial nature of the disease is perfectly evinced to M. Beau, from the following considerations : 1, the march of the disease, which exhibits a catarrhal period, or a state of acute supra-glottidian laryngitis, and a *nervous* period or chronic state, in which the suffocative symptoms are at once more intense and more frequent, from the fact that the secretion of muco-pus is also more free and abundant ; 2, from the influence of moral causes on the paroxysms of cough provoked by the inflammatory secretion, which emotion has rendered more active ; 3, from the special sensation of constriction about the throat ; 4, from its



contagion—for the contained, and in some sort volatile, corpuscles of the inflammatory matter, may very readily, after having been expelled in expiration, be inspired by other individuals, and deposit itself in the healthy larynx, which thus becomes inflamed by the contagious influence.

ART. XII.—\**On Infantile Thrush; (Muguet des Enfants nouveaux-nés; aphthæ)*: by Dr. LEBARILLER, Physician to the Bordeaux Foundling Hospital. Translated from the "Journal de Médecine de Bordeaux, of November, 1856, for the New Orleans Medical and Surgical Journal: by J. P. BARBOT, Apothecary.

PLACED, as I am, at the head of an institution, in which Thrush may be considered as always existing in an endemic form, I have thought it my duty to publish such facts as I have observed in the institution, which may contribute to the elucidation of anything connected with this disorder.

Thrush, as is well known, is a disease characterized by the appearance of small white spots, of a curd-like appearance, on the mucous membrane of the mouth. This affection, known also under the name of *blanchet*, because of the color of the spots, and of *millet*, because of their millet-seed-like appearance, has been classed in several ways.

Some physicians have looked upon it as a vesicular or papillary eruption of the nature of *aphthæ*. Boërhaave, Van Swieten, Bateman, were of that number. The latter denominated it *aphtha lactantium*; Sauvages called it *aphtha lactamen*. Others have applied to it the terms of *stomatitis pseudo-membranosa stomacæ*, considering it a *phlegmasia* of the

\*T. J. W. Pray, M. D., of the New Hampshire Medical Society, will please to accept, for the present, the above translation as an answer to his letter, which is given below, with a view to elicit contributions upon the disease referred to, from the readers of this Journal. In the mean time, the translator will resume, *seriatim*, Dr. Lebariller's serial researches, which will probably give a satisfactory solution to most of the interrogatories propounded by Dr. Pray. That such may be the result, the Editor, "as in duty bound, will ever pray" French sore mouth and American sore mouth must be "one and indivisible."—ED. N. O. M. & S. Jour-

"DOVER, N. H., Nov. 22, 1856.

"Dear Sir:—I respectfully desire that you would answer the following questions in regard to the disease called "Nursing Sore Mouth," as I wish to make some investigation as to its nature, &c.:

"Does this disease prevail in your city and State?

"What is its nature?

"Is it ever found in males?

"Is it a modern disease, or has it long existed?

"What class of persons is the disease usually found in?

"Is there any connection with this disease and anæmia?

"If your time is so occupied that you cannot answer the above questions at length, it would answer my purpose to have brief answers.

"An early answer is respectfully solicited.

"Yours, respectfully,

T. J. W. PRAY.

"Dr. Dowler, New Orleans, La."

mucous membrane of the mouth, with a pseudo-membraneous exudation similar to that of *diphtheritis*.

These appellations are incorrect; for in thrush there is no vesicular eruption on the mucous membrane of the mouth. Nor are the white, miliary and curd-like spots a pseudo-membrane, though M. Lébut has supported this opinion with great ability. Neither are they the product of an abnormal secretion.

Thrush is a vegetable parasite which is developed on the mucous membrane in certain special conditions, and in accordance with the laws so well explained by M. Dutrochet, governing the production of vegetable *infusoria*.\* They are an actual microscopic mold, (*moisissure*) discovered by M. Berg, of Stockholm, afterwards carefully studied by MM. Gruby, Charles Robin and Bouchut, before they published a complete description of the cryptogamous epiphyte, called *oidium albicans*. According to M. Charles Robin,\* thrush is composed of: 1st, tubular sporiferous filaments; 2d, globular or ovoid spores originally.

The tubular filaments (roots, stalks, Gruby; *fibrilla*, Berg;) are cylindrical, elongated, straight, or curved in several directions. They are 0.003m to 0.004m wide, (rarely less, sometimes 5 millemetres wide,) by 0.005m to 0.060m long and even longer, according to the period of development which they have arrived at. Their edges are dark, clearly defined, ordinarily parallel. The interior of the tube is transparent, of a slight dusky color, (*couleur ombrée*.)

These tubular filaments consist of elongated cells, joined by their ends, generally about 0.020m long; the cells are, however, sometimes more than double that size near their connecting point. Generally speaking, their length diminishes as they approximate their sporiferous or free extremity, so as not to exceed 0.010m or thereabouts. They are all ramified (in their *adult* state) once or oftener; these ramifications are cellular also, like the parent filaments. Sometimes these cells are as long, and even longer, than the filaments themselves; at other times, they consist of a single short and rounded cell, or of two or three elongated cells. These filaments and their branches are partitioned off here and there, being usually somewhat compressed where they are partitioned; these divisions are formed by the junction of the rounded extremities of two cells. It is against this articular strangulation, or a little below it, against the *parietes* of the filaments, that the ramifications are inserted. These latter never have any communication with the cavity of the cells.

\*MM. Guersant: Dictionnaire de Médecine, Lebut; De la fausse membrane dans le muguet. (Arch. de Médecine, t. XIII. 1827.) Valleix; Clinique des nouveaux-nés. Trousseau; Leçons Cliniques de l'Hôpital Necker.

\* Mémoire sur l'anatomie et la physiologie des végétaux, t. II, p. 190.

The chambers enclosed in these *septa* generally contain some molecular granules, of about from 0.001m to 0.002m, of a dark tinge, and often endowed with the brownian movement. The adherent or original extremity of the filaments is ordinarily concealed in a mass of spores either isolated or mixed with epithelial cells. It may, however, be isolated, when it will be seen that the first cell is a prolongation of a spore, and that there is a free communication between their respective cavities. The free or sporiferous extremity of the filaments, or of their ramifications, is either of a circular form without any bulging out of its centre, or it is formed by a single spheroid cell larger than any preceding it, and separated from it by a clearly defined constriction. Sometimes this spheroid is elongated by two or three smaller cells.

The spores are either spherical or somewhat lengthened, with clean dark edges, a transparent cavity, and a mottled or marbled tinge, refracting light strongly; they contain in their centre some fine particles endowed with the brownian motion. Sometimes one or two granules of 0.0006m to 1.001 are endowed with the same motion. They are rarely seen strung together like beads of about two or four in number. A certain number of these spores float about freely, but a larger proportion adhere closely to the epithelial cells of the mucous membrane of the mouth.

Those plates (*laminæ*) having a pseudo-membranous appearance, says M. C. Robin, a little further on, do not exhibit any trace of the elements of false membranes, and show no pus globules. They are the tubular filaments, the spores and the epithelial cells. These bodies are disposed in the following manner to form the (*plaques*) plates in thrush:

"There can be seen, on a fragment of the latter, that the epithelial cells form a dense stratum on the surface of the part adhering to the mucous membrane. On the other side, on the contrary, large portions of imbricated cells are covered with spores adhering closely to it, covering it and preventing the edges, which encroach upon one another, from being clearly seen. Other cells are free, being either covered or not with spores; or they are mixed with spores either isolated or united in small masses, and with the filamentous tubes of the vegetable crossing each other in every direction. These tubes creep on the surface of the thrush plates in the midst of the spores and free epithelial cells, (by free, I mean simply united together by the viscous fluid of the mucus,) and form a net-work more or less dense of filaments crossing one another. These plates are soft, easily torn, and it is on the edge of the fragments or on some filaments which have been detached in their whole length, that the free *tubulæ* can be seen."



We will see hereafter, in studying the nature of thrush, that this white production of vegetable origin does not constitute all of the disease; that it is to thrush what the varioloid pustules are to variola; what the *exanthema rubeolica* is to *rubeola*.

Thrush forms an important part of the pathology of newly-born infants, occurring frequently in Hospitals for children. It is not, however, exclusively confined to childhood; it has also been found in adults, but always after they had labored under severe diseases producing very great debility.

The causes which favor the development of thrush are of several kinds. In order to form a clear idea of the causes, it is important to take into consideration the conditions which have operated in the production of the disease in a majority of cases.

Thrush always attacks children placed in the midst of debilitating circumstances; either living in a hospital, or in an unwholesome dwelling, or such as are ill-fed. The sojourn of children in a hospital, particularly in the wards appropriated to infants, seems to me to be the main cause of the development of this malady.

Is not the crowding together of a number of sick children in a few wards, and the deficient ventilation consequent thereupon, sufficient to produce general debility? If adults, in our hospitals, suffer from the pernicious effects of overcrowding, from typhus, &c., are not children, in whom life is less active, more likely to be affected by the same cause?

In the Charity Hospital of Marseilles, out of 547 children admitted during one year, 402 were attacked with thrush.\*

In the Bordeaux Foundling Hospital, out of 380 infants admitted into the nursing wards, (*section d'allaitement*) from September 1st, 1855, to September 1st, 1856, 350 were attacked also with thrush.

Unwholesome, badly ventilated lodgings predispose children to the same affection.

In the course of six years' time, I have met with, outside of the Hospital, but one case of thrush, which was a fine child, suckled by his own mother, who lived in the country, in a low, damp room.

Non-nutritive food must also favor the development of this disease; pap, which infants do not digest well in their earliest age, enfeebles the digestive organs; digestion not being properly performed, the infant becomes enfeebled, and more apt to be attacked by thrush. It has also been stated that children fed with the nursing bottle were more liable to the disease. I have not ascertained this fact.

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\*Seux. *Recherches sur les maladies des enfans nouveau-nés*. Paris. Balliere, 1855. This remarkable work contains the most minute and faithful information on thrush.

The circumstances peculiar to the production of thrush are related: 1st, to age; 2d, to sex; 3d, to constitution; 4th, to season and climate; 5th, to the condition of the mouth; 6th, to contagion.

1st, Age. As I have already stated, thrush may develop itself at all periods of life; but it is seldom observed, except in children at the breast, under two months old, (Baron, Valleix, Seux.) During a whole year, I did not see but three children taken with thrush after having passed their first month. During this same period of time, out of 302 infants less than one month old, 261 were attacked in the first week after having been admitted into the Hospital.

Dr. L. Véron has asserted that thrush might assail the child *in utero*. This statement is not founded on fact, as the presence of atmospheric air is indispensable for the production of this cryptogamous vegetable, as it is for all spontaneous growths. (Dutrochet.)

I have nothing to state about thrush at other periods of life. I would, however, remark that it has been noticed in persons affected with *phthisis*, puerperal fever, and *phlebitis*. (MM. Trousseau, Delpech, Rayer, Depaul and Verneuil.)

2d, Sex. This point has furnished us few important facts. Out of 547 children under M. Seux's charge, of which 265 were boys, and 282 girls, 402 were attacked with thrush, 197 boys and 205 girls.

3d, Constitution. This appears to me to play a secondary part in our hospitals, though Billard and Guersant consider debility as one of the predisposing causes. According to Valleix, on the contrary, robust children were more liable to the disease than others.

Out of 402 cases, treated by M. Seux, 201 were robust, 140 of medium strength, and 61 were feeble children.

In the Bordeaux Hospital, out of 380 cases treated during the year, there were 180 who were vigorous, 125 of medium strength and 75 feeble.

4th. As to *season* and *climate*, Blache, Guersant and M. Bouchut\* believe that thrush is most common in winter and in damp weather. Valleix, on the contrary, believes it to be more frequently developed in warm weather. MM. Baron and Billard have not stated what is the influence of season and climate. In the Bordeaux Hospital, where thrush exists all the year round, those cases which are severe and associated with *enteritis*, happen particularly during spring and summer.

M. Seux, who has observed thrush so carefully in Marseilles, has always seen it developed during the heat of summer, in the (*section d'allaitement*) suckling wards of *La Charité*, and above all in cases compli-

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\* *Traité pratique des maladies des enfans nouveau-nés.* Paris: 1855.

cated by *enteritis*. There were, during winter, 14 cases associated with *enteritis*; during spring, 18; during summer, 33, and during autumn, 32.

The influence of *climate*, particularly, deserves to be noticed. Contrary to the opinion of Van Swieten and Boërhaave, we believe thrush to be most common in warm climates. To illustrate this influence, I subjoin the following statistics from the Bordeaux Hospital:

SEPTEMBER 1ST, 1855, TO SEPTEMBER 1ST, 1856.

For the 3 months ending in	October, out of	90 children, there were	84 cases.
" " 3 " " "	Febr'y, " "	96 " "	89 "
" " 3 " " "	April, " "	116 " "	107 "
" " 3 " " "	July, " "	78 " "	70 "
Total,		580 children.	550 cases.

The *tableau* made by Billard, at the Foundling Hospital of Paris, shows:

Quarter to January,	290 children,	51 cases.
" April,	255 "	55 "
" July,	215 "	105 "
" October,	189 "	48 "
Total,	927 children,	218 cases.

Valleix thinks that one-fourth of the children in the Paris Infirmeries are attacked by thrush.

Statement of the Marseilles Charity Hospital, from 1st February, 1852, to 1st February, 1853:

Quarter to February,	150 children,	96 cases.
" May,	152 "	97 "
" April,	126 "	116 "
" November,	139 "	93 "
Total,	547 children, and	408 cases.

From the above statistics, it will appear that there is a great difference in the number of cases occurring in the North of France, in Paris, in the South, in Marseilles and in Bordeaux. In Paris, 23.50 per 100; in Marseilles, 73.50 per 100; in Bordeaux, .95 per 100.

These tables seem to show the influence of an elevation of temperature, and, as a consequence thereof, the greater frequency of the disease in warm than in cold climates. These facts, however, only apply to thrush occurring in Hospitals for children; for this disease occurs very rarely, either in Bordeaux or in Marseilles, outside or far away from the Hospitals, (*nosocomia*.)

Thrush never becomes *epidemic*,\* for if it did, it would rage outside of the Hospitals, and would be propagated amongst children, who are often more or less clustered together in crowds.

5th. *The state of the child's mouth* presents important modifications, which may cause the spontaneous development of the cryptogamous parasite of thrush. The mucous membrane of the mouth assumes a rasp-

\* This statement appears to us too absolute.—NOTE BY THE EDITORS.



berry-red color, and its coat shows a strongly acid reaction. This acidity of the mouth is an indispensable condition for the production of thrush, which never appears without it.

M. Gubler, in a note on thrush in the *Gazette Médicale*, of June 26th, 1852, says : "I have ascertained that children, suffering from this singular disease, always have extremely acid secretions in the mouth. The mucous secretion from the tongue, the inside of the cheeks, or any part of the bucco-pharyngeal cavity, strongly reddens litmus paper, even if applied immediately after the child has left the breast. This acid reaction is found before any sign of thrush be apparent; but there already exists the development of an intensely raspberry-red color of the mucous membrane lining this portion of the digestive canal; so that the appearance of the *cryptogame* may be predicted when these two peculiarities are found united."\*

In order to understand well the influence of this cause, it is important to study, in relation to it, the state of the mouth in the child from its birth up to the appearance of the disease.

M. Seux has made very important researches in this respect, and has arrived at the conclusion, that the mouth of children at the breast, when in good health, is usually acid. This acidity, slight or null at birth, becomes more manifest a few days afterwards; and he has discovered it in children in different conditions of health and vigor.

His notes relate to 100 healthy children taken from birth up to ten months of age. Out of these 100, 87 were in the *Hospice de la Charité* and 13 in the city. In only 5 of these, the mouth, examined almost immediately after birth, did not show any traces of acidity; but at a subsequent examination of the same, made two days afterwards, the mouths of three more were found to be acid. In the other 95 children, acidity existed from the first.†

In the Hospital for children, we have examined 50 infants, from birth up to three months old. With the exception of four, who had not yet taken the breast, they all exhibited the acid reaction at the first examination. In the other four, it was discovered later. Feeble at birth, this acidity became more manifest, especially at two or three months. Fifteen children were examined for the same object, in town. All yielded the same result.

To discover acidity in the month, I have, like M. Seux, used litmus paper. This invariably was reddened whether the infant had just left the breast, or had not taken it for some time; the reaction was the same in both cases. In those infants that were destined to be attacked with

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\* Seux: *Op. Cit.*, p. 185.

† Seux: *Op. Cit.*, p. 19.

thrush, it was more marked; thus showing us in advance the invasion of the disease.

Acidity of the mouth is, therefore, a cause and not an effect of thrush. Are not these phenomena connected with those of acid fermentation? Our observations concur, like those of M. Seux, to induce us to conclude with him:

1st. That the mouth of the healthy new-born infant is acid;

2d. That this normal acidity is more and more marked as the infant advances in life;

3d. That lactation has nothing to do with this acidity.

It is known that in the adult, the mouth is alkaline in its normal state. Is acidity produced in the adult attacked with thrush as it is in the adult suffering from *gastritis*? (Donné.) I have never observed this but once, in a girl of nineteen, having typhoid fever. At the beginning of an attack of confluent thrush, and during its progress, her mouth showed a well marked acid reaction. She died shortly after.

These facts demand new researches; as they exist now, they seem to us to throw some light on the etiology of thrush.

6th. Lastly, with respect to *contagion*, we ask, is thrush contagious? This is a difficult question to answer; for, as M. Seux observes: "If we examine this disease attentively in our hospitals, it is difficult to separate the part due positively to the influence of *locality*, from that which children\* diseased may have on those who are not yet suffering. On the other hand, if our observations be made in private practice, we only see isolated cases."

Those authors who have treated this question have resolved it in various ways. According to Guersant and M. Blache, it is not contagious. Auvity, Doublet, Gardien and Dugès consider it contagious. M. Bouchut believes that it is propagated like certain cutaneous affections, as itch or *tinea*. It may be transmitted by direct contact; this opinion was also entertained by MM. Baron, Billard, Valleix and Trouseau. Berg, of Stockholm, communicated it from one child to another, by depositing a portion of the cryptogamous product on the tongue of the child to whom he wished to communicate this contagion.†

"There can be but two kinds of contagion—a disease is either communicated by means of the circumambient air, which constitutes miasmatic infection; or by direct contact. The latter is the true, the immediate contagion."‡

Is thrush propagated by the first method? It is permanent in the wards of our hospitals, because of the unhealthiness in the midst of which the children live. Congregated therein are the causes sufficient to produce the

\* Bouchut: p. 472

† Seux: p. 27.

‡ Seux: p. 27.

disease by modifying the infantile organization, these conditions being always similar. Remove the children from this influence, thrush will diminish in intensity, and will not be propagated among other children. This we see every day in children that nurses take away from the hospital to bring up in the country. It often happens that these little patients are not entirely cured at the time of their removal, and still no inspecting physician has ever told us that they have ever infected the children of their nurses living in the same house and often sleeping in the same cradle. Thrush is not propagated then by miasmatic infection.

Immediate contagion is more easily proven.

If a child can communicate thrush to the nurse, it will be a proof of this mode of transmission. MM. Bretonneau, Bouchut and Rayer have cited cases of transmission of thrush from the child to the nurse. M. Empis has stated the same fact. Baum has recognized, under the microscope, the vegetable nature of the product transmitted by a child suffering of thrush to its nurse's nipple.\*

To verify this fact, M. Seux has examined upwards of 1600 children suffering from thrush, and has never seen it develop itself on the nurses breasts. He has often discovered on their *mamma* excoriations, small pellicular white plates, known under the name of *mal fon*, but never thrush. These pellicles, examined under the microscope by M. Seux and M. Derbès, Professor of Natural History in the Faculty of Sciences of Marseilles, have appeared to them constituted by filaments similar to those which M. Charles Robin considers as belonging to the filiform *algæ* of the mouth, (*leptothrix buccalis*.) Nor have we ever seen thrush communicated to our nurses by sick children.

But may not the nurse's nipple, though not attacked by thrush, be the means of conveying it from the mouth of a diseased child to that of a healthy child? Dugès had one of his children diseased in this way. M. Bretonneau cites a similar fact. M. Seux reports a conclusive case.

One of our predecessors, having taken from the hospital a nurse for a new-born infant, found that the latter was seized with thrush. This fact was the more significant, as all the children were ill at that time, and the nurse must necessarily have suckled a child having thrush. We can very well conceive that the seeds of the *odium albicans* can be transmitted by means of the nipple or nursing bottle, and that if these found the child's mouth under particular circumstances, they would germinate and develop themselves. We therefore believe that thrush is communicated by contact, either immediate or intermediate.

[To be continued.]

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\* Chas. Robin: *Op. Cit.*, p. 510.



ART. XIII.—*On the General Use of Chloroform* : By Dr. M'LEOD. In the Medical and Surgical Society of London, (May, 1856.) Dr. M'Leod read the following paper : *On the general use of Chloroform.*

THE author began by remarking on the necessity which existed for all surgeons clearly making up their minds on this important subject, and thoroughly studying the question in all its bearings. He proposed to run rapidly over the different points of practical moment presented by a consideration of anæsthesia ; and to submit the question as clearly as possible before the Society, with the view of eliciting from its members an expression of their opinion on the subject. Dr. M'Leod referred at the outset to the experiments of Mr. Nunnely and Dr. Simpson, instituted for the purpose of determining the relative value of different anæsthetics, and stated his intention of confining his observations in what followed to chloroform, as being the only anæsthetic of practical value. He then reviewed the different hypotheses which had been started, to explain the physiological action of anæsthetics when inhaled, and gave his adhesion to that view which ascribed it to absorption into the blood, and its being thereby carried to the nervous centres. The fact that both the chloroform and ether can be detected in the flesh and blood for a considerable period after they have been inhaled, the author thought, went a considerable way to support that view. Dr. M'Leod then dwelt on the modes in which anæsthetics, when inhaled, might cause death. He showed that in those cases which had ended fatally, as well as in experiments conducted on animals to determine the question, the most constant appearances were these—1, a highly congested state of the pulmonary tissues ; 2nd, an engorged state of the right side of the heart, and an empty state of the left ; in other cases, a flaccid condition of the whole organ ; 3d, a congested state of the brain. These, with an altered condition of the blood itself, seemed to be fairly attributable or referrible to the drug. Death, then, had been ascribed to—First, asphyxia, caused, according to some, by the arrest of the chemical changes carried on in the lungs ; and, according to others, by the capillary vessels of the lungs ; second, to coma, caused by the action of the vapour in the nervous centres ; and three, to syncope, caused either through the various centres, or from the local action of the overcharged blood in the heart itself. From a careful consideration of the fatal causes, death, the author thought, was sometimes due to one of these modes, and sometimes to another, and at times to two or more of them combined. He showed that all arose from the employment of the vapor too little diluted with atmospheric air, and were to be avoided by carefully guarding against such an error in the administration. Dr. M'Leod next alluded to the fallacy of allowing theoretical notions, as to what parts of the nervous system are at any particular period of the administration being implicated, or as to how many drops are necessary to produce such and such effects, to interfere in the practical employment of anæsthetics. Such attempts only withdraw the mind from the real points of importance, and lead to erroneous practice. He contended that all apparatus was not only uncalled for, but absolutely injurious, as tending to frighten the patient, and prevent

the escape of the expired breath. He said it mattered not whether we measured the amount of the liquid the patient had inhaled or not, so long as we are guided by effects. The propriety of keeping the patient from food for some hours previous to the administration of the anæsthetic, the necessity for quiet during the administration, and of allowing a free circulation of pure air around the patient, were dwelt upon, and great weight was put on the recumbent position being assumed in all cases during the exhibition. The removal of all constrictions of dress about the neck and chest was insisted on, as well as the necessity of observing the temperature of the apartment, as Dr. Snow had shown how great a difference existed in the amount of vapor set free at different elevations of temperature. The advantage of bringing the patient rapidly under the influence of the drug, while a large amount of atmospheric air was at the same time admitted, was pointed out, and the author proceeded to show that the discrepancy of opinion as to the "*upholding effects*" of chloroform arose from the degree of action established; that, if not carried beyond a certain point, the effect was certainly of a supporting character; and that the depression spoken of by observers was the result of a larger amount of vapor being administered than was justifiable. The respiration was shown to be the great guide in the administration of chloroform. The eye, too, being upturned and fixed, afforded no information as to the establishment of the action, but neither the pulse nor the pupil communicated anything. The propriety of observing the color of the lips and countenance, and also the flow of the blood from the cut vessels, was declared to be of consequence as affording indications of the approach of syncope. The author stated his conviction that age, sex, diathesis, idiosyncrasy, were matters of indifference in administering chloroform, if we were guided by effects. Having referred to the combined use of chloroform and ether, the author went on to speak of the proper steps to be taken in the event of an overdose. As the chief danger was seen to arise from the use of the vapor in a state of too great density, or from its accumulation in the system, the great remedy was shown to be the free admission of pure air, and the employment of artificial respiration, if the patient was too deeply affected to work off the over charge by his own exertions.—The wonderful manner in which the respiratory movements may be excited by galvanism was then referred to. The method of raising the epiglottis by the finger, or by drawing forward the tongue, as recommended by M. Regnault, was strongly advocated, and the assistance obtained in producing the desired result by dashing cold water on the face and chest noticed. If the danger arose from syncope, the propriety of applying stimulants to the nostrils, and using them by the rectum, or the direct stimulation of the heart by needles, or the actual cauter, were pointed out. The method of inverting the patient, recommended by M. Nelaton in such cases, was also detailed. No fluids should be given by the mouth for some time, till the patient had become conscious.

The author summed up this part of the subject by recommending in all cases the admission of a stream of fresh air, the drawing forward of the tongue, and the application of cold water to the face and chest.—If death appeared to approach by syncope, stimulate the heart in one of the ways mentioned, and depress the upper part of the body. If by

coma or asphyxia, use artificial respiration produced by the hands, or electricity. The use of anæsthesia in the practice of medicine was then shortly reviewed, and shown to be chiefly attended with benefit in relieving pain, however arising. Its employment in many diseases, implying lesions of sensation and motion, was dwelt on, together with its use in cases of mental affections. In the paroxysms of many spasmodic and neuralgic affections, it was shown to be invaluable. Surgery, however, was declared to be the real province of anæsthesia, and that in which its benefits were more gratefully recognized. The advantages accruing to both the surgeon and patient were pointed out, and the cases in which it was employed were stated to be reducible to those in which pain or spasm were to be allayed. Dr. M'Leod emphatically denies that there was anything in gun-shot wounds which made the use of anæsthesia in these less beneficial than in the same accidents of civil life, and he contended that as the pain and suffering in these cases were very great, so much the more necessity existed for its use. He stated his conviction that the mental state of the patients, who were the recipients of these two species of injuries, made no real difference in this question. Shock and pain were both the most fruitful causes of a fatal issue both in primary and secondary operations ; and as these two evils were avoided by the employment of anæsthesia, we should naturally expect to find that the mortality succeeding capital operations had decreased since the use of anæsthesia had become general, and this the author would presently show was the fact. In the examination, adjustment, and dressing of injuries, in the employment of instruments to cure disease, in the reduction of hernia and dislocations, and, in short, in all those instances in which the surgeon's interference caused pain, or in which it was desirable to prevent any muscular opposition on the part of the patient, the use of anæsthesia was shown to be invaluable. Its use in tetanus during the war was spoken of, and the fact stated that in one well-marked case at least its continued use had been followed by recovery. Dr. M'Leod thought that in the General Hospital its use had been, beyond all question, successful, and he did not agree with Mr. Mouat, who had read a paper on the subject at a former meeting, that in the cases there or elsewhere it could be fairly said to have produced any disagreeable consequences. The very few cases in which it had been said to have given rise to unpleasant or fatal effects contrasted strongly with the multitude in which it had been successful, in which it had obviated pain and saved life. The writer next glanced at the various objections which had at various times been made to the use of anæsthesia, and showed how false both theory and practice had proved them to be. He also alluded to the many operations which were now practicable and hopeful, which before the discovery of anæsthesia were unattainable. To military surgeons, the detection of feigned disease was now a matter of simplicity, and many of the questions which divided them in opinion were now much changed in their bearings. All objections to primary amputations were now set aside, and the doctrine of "making the knife follow the ball," had received a new and important support. The writer expressed his strong conviction that shock was not established till some time (the direction being different in different injuries, and persons) after the receipt of an injury, as by a ball, and he said he felt sanguine that an



operation under chloroform performed in this interval, would obviate much of the succeeding shock, by removing its cause. He was sorry that during the past seige, which was so manifestly favorable for testing this, so few attempts had been made to carry it out. In conclusion, the author having stated his opinion that no case absolutely forbade the use of chloroform, referred to those in which its administration should be carefully watched. Operations on the back of the mouth, from the danger of blood getting into the throat ; cases of severe hæmorrhage, or long suppuration from the activity of the absorption ; acute disease of the lungs from the irritation caused ; disease of the heart, particularly in active dilatation, with weakening of the organ, on account of the fear of fatal syncope ; aneurismal disease of the aorta or marked apoplectic diathesis ; and cases in which fatty degeneration may be suspected. These seem to comprise all those cases in which extra caution was necessary. That care should be taken that the agent employed should be pure was insisted on, and the tests to determine the presence of adulterations were stated. Dr. M'Leod next gave the statistics furnished by Mr. Skey, Drs. Simpson and Snow, and MM. Velpeau and Bouissau, as affording a large amount of evidence in favor of chloroform in surgery, as not only proving its beneficial influence in relieving pain, but in directly saving human life ; and he stated that while, during the past war, it had been administered in innumerable instances, only one death had followed its use ; and in that case, the patient was not placed in the recumbent posture. While expressing his own belief that, if administered with proper caution, chloroform, might, with perfect safety, be employed in all those cases which fall to the care of the military surgeon, in which it is desirable to overcome pain or spasm, or muscular exertion, the author called on the members of the Society to give a clear and decided verdict on this important subject, founded on the experience of this great war, which would forever put this question at rest, and remove all doubts as to their appreciation of the immense benefits bestowed on humanity by anæsthetics.

Dr. Blenkins understood the author to say, that only one fatal case had taken place, whereas he believed more had occurred. He felt very much obliged to Dr. M'Leod for a highly interesting paper, and considered the author had gone most fully into his subject. He (Dr. Blenkins) trusted that each individual would give his experience of the use of chloroform, without any view to opposition, but for the benefit of all. In his practice, chloroform had been just as successful in the Crimea, in severe operation, as at home ; and he quite agreed with the author, that there is no difference in the effects of accidents in civil and military life ; he had not seen any ill effects in any one of his cases. He did not regard chloroform as a drug to be treated with carelessness and indifference, but with great care ; we should watch the pulse and respiration. Objections should not be made to its use in easy operations without a fatal termination. He remembered one case, that of an old soldier, where the patient was a very long time before he perfectly recovered ; but this was owing to the length of time it took to get him under the influence of the drug ; and this, again, was accounted for by his addiction to strong drinks. The theory of its action would occupy too much time for him to enter upon now. He expressed his conviction

that chloroform acts through the blood, and looked on it as a remedy requiring vigilance in its use. He had operated fifteen times under its influence, besides having given it in tetanus, fits, &c. He believed it to act as a stimulus, and to raise the pulse when low. On one occasion, he was obliged to expose the head of the femur at night, with only one assistant, and he believed it almost impossible to have done so without the aid of chloroform. In conclusion, he begged to state that all his observations agreed with those of the author.

Dr. Sall considered that the Society was much indebted to Dr. M'Leod for the very valuable and lucid paper which he had just read; and as we are not confined today to the discussion of chloroform in cases of gun-shot wounds, he begged to state that he had used it with the most marked success in cases of delirium tremens, and he had found it a more beneficial mode of treatment than the stimulo-narcotic plan. He then alluded to the case of a youth in a band of the 93rd Regiment, who after suffering much distress of mind, from disappointment, relapsed into a state resembling hysteria, accompanied with a complete cataleptic condition, in which he remained for twelve hours. In this case, a variety of stimulating plans of treatment were tried without success, but under the anæsthetic use of chloroform the boy quite recovered. He considered that in the administration of chloroform there were two things necessary to be borne in mind—the purity of the drug, and the correct mode of administering it. He (Dr. Sall) had never witnessed an unfortunate result from its use.

Dr. Bowen had never heard a more practical paper, and he agreed entirely in the views of the author. He had seen anæsthetic agents used for the last six years, and had given them himself between 2000 and 3000 times. He considered that the best mode of administration was by means of a napkin, as now stated by Dr. M'Leod. As regarded the purity of the drug, he was only surprised that more accidents had not happened from its frequent impurity. He had detected both free chlorine and pure muriatic acid in different samples furnished twelve months since to the Military Hospital at Plymouth. It had been given by himself for fourteen hours to one woman; and Professor Simpson, in a case of convulsions in an infant, had given 100 ounces within a period of two weeks, with most beneficial results. He had been informed by the Russians, that throughout the siege chloroform had been used with only one or two fatal results, which was not surprising under the circumstances: it appeared that their mode of administering it was the same as that now recommended.

Mr. Howard considered that in delirium tremens it was invaluable; by its means he had procured sleep, when opium could no longer be given with safety, and after every other means had absolutely failed.—*Lancet, Oct.*

ART. XIV.—*On the Pathology of Whooping-Cough:* By Dr. GRAILY HEWITT, Lecturer on Comparative Anatomy and Zoölogy at St. Mary's Hospital Medical School.

[DURING an epidemic of whooping-cough, which proved very fatal in the Infirmary and Workhouse of St. Marylebone, Dr. Hewitt had ample opportunities of investigating the morbid appearances in this disease. His views on the production of pulmonary collapse are in accordance with those of Dr. W. T. Gairdner, as the following passage will show.]

The facts I am about to submit go to prove that the catarrhal inflammation of the bronchial tubes, which occurs in whooping-cough, is, in fatal cases, attended almost universally with collapse of the lungs. It will then be obvious that an attempt to direct attention to the frequency and importance of this co-existence will not be misplaced, inasmuch as the fact will have considerable influence on the question of the appropriateness of the one or the other plan of treatment, in cases where such a co-existence is to be suspected.

The observations which form the basis of this communication, and the results of which will now be given, have, most of them, been made at the St. Marylebone Infirmary and Workhouse, where, during this last spring, whooping-cough has been the cause of a considerable mortality. Most of them have been made on fatal cases which have occurred in one or other of these institutions; but some of the cases came under my notice elsewhere. The observations are nineteen in number. The ages of the children who were the subjects of them varied from four years to one month, the average being eighteen months. In all, the state of the lungs was carefully noted. The chief lesion found after death was collapse of the lung substance. The following is a statement of the degree to which this pathological condition manifested itself in the different lobes of the two lungs.

In the *right lung*, portions of the upper lobe were found collapsed in six cases, and in four more to a less degree.

The middle lobe was collapsed, wholly or in part, in sixteen cases.

The lower lobe was more or less affected with collapse in eighteen cases.

In the *left lung*, the upper lobe presented the same lesion in fifteen cases, the whole of the anterior tongue-like prolongation being in most of the cases affected.

The lower lobe was collapsed, more or less, in eighteen cases.

In seven of the cases, the portions collapsed were also congested—in some to a high degree.

The *mucous membrane* of the bronchial tubes was in some cases slightly injected. In almost all, the tubes were filled, more or less, by a mucopurulent fluid, rather tenacious in consistence, and in the tubes leading to collapsed portions non-aërated.

The air cells in the lobules immediately adjoining the collapsed portions were enlarged, although this enlargement was never found to be great in degree. It was, however, quite obvious with the aid of a lens. The space created by the collapse of certain portions appeared to be filled up by a corresponding increase in the bulk of the parts adjoining; thus,



in some cases, where the tongue of the upper left lobe was collapsed, it was tilted downwards and backwards, while its position was occupied by an emphysematous portion of the remainder of the lobe.

True inflammation of the perenchyma of the lung was only seen in four cases. In one, a large portion of the upper right lobe was affected, and tubercle found in the bronchial glands. Hepatization to a slight extent, and confined to one or two lobules scattered here and there in the lung, was met with in one or two other cases. The bronchial glands were, in all cases where the attention was directed to them, enlarged, congested, friable. In three of the cases, they were infiltrated with yellow tubercle.

The state of the *pleura* was also observed. In five cases only were there any adhesions found, and in two of these the lungs were tuberculous. In one of these tuberculous cases, both pleural cavities contained a tolerable quantity of effused fluid, but no fluid was found in the other cases. No appreciable change was detected in the vagi nerves, although they were examined in most of the cases.

The *larynx* and *trachea* presented nothing remarkable; they contained generally a certain quantity of puriform fluid. The mucous membrane was never markedly injected.

In all these cases, then, the bronchial tubes were the seat of a catarrhal inflammation, affecting chiefly the smaller tubes, and in many cases the air-cells themselves. An inflammation occupying the smaller air-tubes has been called variously capillary bronchitis, broncho-pneumonia, catarrhal pneumonia, vesicular bronchitis. The two latter terms seem the most appropriate, particularly as applied to the affection of the lungs which occurs in whooping-cough. There would appear to be an intimate connection between this catarrhal pneumonia and collapse of the lung; the one seems to have an important influence in causing the production of the other. What has been improperly termed lobular pneumonia is, in reality, collapse of the lung, brought about by the catarrhal inflammation of the minute bronchi. It is not pneumonia at all, in the true sense of the word. In the hepatization of pneumonia, the lung substance is enlarged, hard, firm, very friable, breaking down into a purulent-looking detritus on pressure; the cut surface is granular, and inflation produces no effect in restoring to the parts affected the natural appearance and physical character. The hepatized portions are non-crepitant, and sink in water, agreeing in these characters with the collapsed portions.

Too much importance can scarcely be attached to this distinction; and there can be no doubt that many cases, in which collapse of the lung only existed, have been treated as if pneumonia were present, and therefore inappropriately. An antiphlogistic mode of treatment might suit the one kind of case, but it would tend to hasten a fatal result in the other.

[The following remarks on the secondary condition of the lungs following collapse are also important:]

Another question of great interest is the secondary effect of collapse of one portion of the lung on other portions not in the same condition. The observations I have made on this subject, enable me to state that a secondary effect is produced, and what that effect is I will now go on to specify. As I have before remarked, the size of the air-cells, at differ-

ent situations on the surface of the lungs, was examined with the aid of a lens, the result of such examination being to establish the fact that in the lobules immediately adjoining those which were collapsed, the air-cells were decidedly enlarged. The extent of surface which presented this enlargement of the air-cells bore a certain and constant ratio to the amount of lung which was collapsed; thus, when the collapse was slight in amount, the air-cells in the adjoining lobules were little altered, and *vice versa*. These facts are strongly confirmatory of the opinion of Dr. Gairdner, as to the production of emphysema generally by collapse of the lung. The vacuum which would be formed in the cavity of the thorax by collapse of a portion of its contents must necessarily be occupied by some solid or gaseous material, and it is obviously the most probable occurrence, that in order that this vacant space may be filled up, the lung substance near it will be further expanded, the air-cells becoming thus dilated, and emphysema produced. According to this theory, emphysema is a *complementary* lesion. Dr. Gairdner is of opinion that emphysema is always produced in this way. This may or may not be the case; my own observations are not sufficiently numerous to enable me to give an opinion. Thus much may, however, be with truth stated, that in those of the foregoing cases, in which emphysema was observed, this theory seems the only adequate explanation of the appearances which presented themselves.—*Braithwaite's Retrospect. Edin. Med. Jour.*

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#### ART. XV.—*Sanitary Results from Improved Dwellings in England.*

JOSIAH CURTIS, M. D., in his Analytical and Sanitary Observations in relation to the Census of Boston, for 1855, has given the following summary, illustrative of the advantages of improved dwellings in the prevention of diseases, and the preservation of health, as tested in England, upon a limited scale.

The facts developed in this behalf, are worthy of the serious consideration of capitalists in the hot climates of Southern cities and plantations. Without dwelling upon the high aims of benevolence, there can be little doubt that landlords can cause salubrious houses to be built in towns and cities, without enhancing their expenses, or diminishing the amount of their incoming rents, whereby they may combine duty with interest, benevolence with a good rental, healthful paying tenantry with dryness, elevation and cheapness of their dwelling-houses. Cheap houses can be made, with all the elements of salubrity to a far greater extent than can be found in many of the existing costly edifices of New Orleans. Cheap houses alone are accessible to the poor, and rent more readily and profitably for the proprietor than any other class of buildings. Model houses,

salubrious as palaces, erected with reference to health, would cost the proprietor no more than the existing dismal tenements, with their low, miry, rotten floors, and humid, unventilated apartments, whence thousands are carried to the celebrated *wet grave-yard—mud to mud*.

The recent mails bring information, that the French Government is about to construct sanitary dwellings, after the English model. Let the capitalists of New Orleans, who wish to make money for themselves and do good to others, build houses, so as to combine cheapness with salubrity.—ED. N. O. MED. AND SURG. JOUR.

The facts disclosed, as the results of registration, gave definiteness to the conviction which had been growing for several years in the minds of many observing individuals. In England, this took a practical direction a few years since, and led to investigations by persons in private and public life. The evidence thus collected, distinctly traced to the condition of the houses of laboring classes, the main cause of the excessive sickness and mortality which the registration records had indicated.

But the evidence was not so apparent, that this state of things is no necessary and inevitable condition of poverty. While the consequences of bad sanitary conditions were demonstrated, there were presented no very conclusive facts to prove the power of good sanitary conditions, to secure to the working man and his offspring the like measure of health and life as is possessed by the wealthier classes. There was, indeed, the strongest conviction in the minds of those who had paid attention to the subject, that evidence to this effect was obtainable, and they felt assured that it would be found in the result of residence in houses so constructed as to be fit for human habitation.

It was under this impression that, about fourteen years ago, a few individuals, who had taken the lead in the investigations just referred to, formed themselves into an association, for the purpose of putting the truth of their conviction to the test of experiment. Their plan was, to erect a large building, divided into suites of apartments capable of accommodating a number of families, provided with the following sanitary conditions :

1. The thorough subsoil drainage of the site.
2. The free admission of air and light to every inhabited room.
3. The abolition of the cesspool, and substitution of the water-closet, involving complete house-drainage.
4. An abundant supply of pure water.
5. Means for the immediate removal of all solid house-refuse not capable of suspension in water, and of being carried off by water.

The association did not conceive it possible for any private body to provide houses of this description for the laboring classes generally, but they thought that it might be practicable to erect some healthy and comfortable houses fit for the laborer and artisan, and to offer such improved dwellings, at no higher rent than is now paid for inferior and unhealthy houses, and they proposed to erect as many of these as should be found possible.

It also seemed probable that benefit would result from their example ;



that if it should be found practicable to offer houses well built, well drained, and well supplied with air, water and light, at no greater charge than is obtained for houses in which no provision whatever is made, or attempted, for the supply of any one of these essential requisites of health, cleanliness and comfort, a public service would be rendered beyond the mere erection of so many better constructed houses ; and that, especially, it might help to render it no longer easy for the landlord to obtain an amount of rent for badly-built, which ought to suffice for well-built houses—and that it might thus indirectly tend to raise the general standard of accommodation and comfort for all houses of this class.

A charter was readily granted by the Crown, under the Premiership of Sir Robert Peel ; and subsequently a supplemental charter was given, bestowing power to extend the scheme, by establishing Branch Associations in the Provincial Districts of England and Wales, and increasing the capital to one million sterling.

Seven years elapsed before the preliminary proceedings, and the erection of the first buildings were completed, so that they have been opened for residents only about seven years.

This first association took the name of the "Metropolitan Association for Improving the Dwellings of the Industrious Classes," and their first buildings, called the "Metropolitan Buildings," are situated in a crowded neighborhood, occupied almost entirely by the working classes.

The Metropolitan Buildings (Old Pancras Road) consist of 110 sets of rooms, 20 being sets of two rooms, and 90 of three rooms. Attached to each set of rooms is a scullery, provided with a sink, a supply of water at high pressure at the rate of forty gallons per day, and the means of carrying off ashes and other solid refuse through a shaft accessible from the scullery. There is no cesspool on the premises. The water-closet, substituted for the privy, is situated in the scullery, the door of the closet being so hung as, when open, to shut off access to the scullery.

Each living-room is furnished with a range, boiler and oven. By an extremely small quantity of fuel, the oven is capable of baking bread, cooking meat, and any other kind of food, and the boiler contains a quantity of hot water always ready for use.

The sum expended on these buildings amounts to £17,736 17s. 11d. The rooms, which average from 14 ft. by 10 ft. 6 in., to 13 ft. by 8 ft., are let from week to week ; the rent of each set varies from 3s. 6d. to 4s. 6d. per week. That these rents are moderate, will be seen by comparing them with the rents commonly obtained in the metropolis.

In the streets in the neighborhood of Drury Lane, for example, single rooms let for from 3s. to 4s. 6d. per week. The average rental in Westminster for a single room, not twelve feet square, is 3s. per week. The total rents receivable from the various establishments of the Association, since December, 1847, amounts to £14,630 11s. 7d., of which there has been actually received £14,594 6s. 11d., leaving a deficiency from bad debts of only £36 4s. 8d. for five years.

The occupants are chiefly the higher class of laborers and artisans.

Besides the Metropolitan Buildings in Pancras Road, the Association has erected another set of Metropolitan Buildings in Albert street, Mile End, New Town, capable of accommodating 60 families, at a cost of

£10,297 4s. 10d. They have also purchased 25 houses, situated in Pelham street and Pleasant Row, Mile End, capable of receiving about 23 families, at a cost of £5,120 19s. 3d.; and they have decided on erecting another building in Bermondsey, capable of accommodating 108 families, at a probable cost of from £20,000 to £25,000.

The Directors have also recently obtained possession of a building in course of erection in New street, Golden Square, in the parish of St. James, which will accommodate 64 families. A lodging-house, for single men, was erected, capable of accommodating 234 inmates, at a cost of £13,493 13s. 9d., and another, capable of accommodating about 128 inmates, was purchased by the Society for £1,422 7s. 7d., being leasehold, at a heavy ground rent. Two years ago, four Branch Associations had been affiliated with the parent institution, namely, at Brighton, Dudley, Newcastle and Ramsgate.

Such are the means which the Association were enabled to acquire for making the experiment on which they had decided.

The results of the experiment with reference to its great object, the protection of health and the diminution of preventable sickness and mortality, are now to be stated.

In the year 1850, the comparative mortality of the residents in the Metropolitan Buildings, both adults and infants, was so small, that it was generally concluded that the result was accidental. In the year 1851, this comparative low rate of mortality continued, though the actual mortality was higher than in the former year. In the subsequent year, the mortality again became nearly the same as in 1850.

The following are the actual results : In 1850, the total population in the Metropolitan Buildings, Old Pancras Road, was 560, and the deaths were 7, being at the rate of twelve and a half in 1,000 of the living. In 1851, the total population was 600, and the deaths were nine, being at the rate of 15 in the 1,000. In 1852, the total population was 680, and the deaths were 9, being at the rate of thirteen and a fraction in the 1,000. The average mortality of the three years in the buildings has been 13.6 per 1,000. But, taking together the whole of the establishments of the Association, which had now come into full occupancy, the total population for the year ending March, 1853, amounted to 1,343. Out of this number there were, during that year, 10 deaths, being at the rate of seven and a fraction in the 1,000.

If this mortality is compared with the mortality of the metropolis generally, and with the mortality of one of its worst districts, the following results are obtained : The deaths in the whole of the metropolis, during the same year, (1852,) reached the proportion of twenty-two and a fraction in the 1,000, (which is more favorable than the city of Boston exhibits;) consequently, the total mortality in London generally, taking together all classes, rich and poor, was proportionally more than three times greater than the mortality in these establishments. On a comparison of the infant mortality in these dwellings, with that of the metropolis generally, the results present a still more striking contrast. Of the total population in the establishments of the Associations, (1,343,) 490 were children under ten years of age. Among these there occurred five deaths, being in the proportion of 10 in the 1,000. In the same year, the infant mortality in the establishments of the Association has been little more than one-fifth of that in London generally.

This low rate of mortality, the comparative absence of sickness, and the general state of well-being implied in the two former conditions, will appear the more remarkable, when compared with the mortality in one of the worst districts of the metropolis. In the Notting Hill division of Kensington Parish, there is a place called the "Potteries," which is wholly destitute of the sanitary provisions secured to the improved dwellings.

In the Potteries, the proportion of deaths per cent. to the population was 4.03 or 40 in the 1,000; in the Metropolitan Buildings it was .74 or 7 in the 1,000, being an excess in the Potteries of 33 in the 1,000. In the Potteries, the proportion of deaths per cent., under ten years of age, was 10.9, or 109 in the thousand; in the Metropolitan Buildings, it was 1.0, or 10 in the 1,000, being an excess in the Potteries of 99 in the 1,000. In the Potteries, the proportion per cent., of deaths from zymotic diseases, under ten years of age, to the population, was 5.2 or 52 in the 1,000; in the Metropolitan Buildings it was .82, or 8 in the 1,000, being an excess in the Potteries of 44 in the 1,000.

If the deaths in the whole of the metropolis had been at the same rate as in the Potteries, there would have died in London, in that year, 94,950 persons, whereas the actual deaths were 54,213; that is, there would have been a loss of upwards of 40,000 lives; and if the whole of the metropolis had been as healthy as the Metropolitan Buildings, Old Pancras Road, on an average of three years, there would have been an annual saving of 23,000 lives.

Social and physical results in all respects similar have been obtained by another society, the "Society for Improving the Condition of the Laboring Classes," incorporated by Royal Charter, with the Earl of Shaftsbury for its President.

Evidence confirmatory of the efficacy of sanitary provisions to prevent the recurrence of epidemic diseases, and greatly to reduce the rate of mortality, have also been obtained from other sources. One of the most unhealthy spots in the metropolis has recently afforded a signal instance of it.

Three years ago, Lambeth Square was as unhealthy as the Potteries. The population remained the same; the occupations, mode of life and habits of the people, remained the same; no change of any kind took place, excepting the introduction of certain sanitary improvements. No history is more instructive. A new system of drainage was applied to the whole square. Water-closets were substituted for cesspools, and stoneware pipes for brick drains, and the apparatus was provided with an adequate supply of water.

By these improvements the houses were placed in the same sanitary condition essentially as the Society's dwellings. The result on the health of the inhabitants was strikingly similar. On a re-examination of this property in November, 1853, it was found that the mortality had been reduced from 55 in 1000, to 13 in 1000.

Results so extraordinary are beyond hope, and almost beyond belief, but derived from sources thus widely different and independent, they are confirmatory of each other. They have further received decisive confirmation to a most unexpected extent from the operation of the Common Lodging Houses Act.

The "Common Lodging House Act," received the Royal assent on



<sup>t</sup>he same day that the "Laboring Classes Lodging House Act" did. The former is a compulsory, the latter an enabling act.

Typhus, seems to be the fell destroyer of more lives in England, than any other disease ; but it has been totally annihilated in many neighborhoods by sanitary measures. At last advices, there had never occurred a single case of typhus in any one of all the improved dwellings, since they were first opened. This remark applies to all Model Lodging Houses with which we are acquainted ; and is equally true of other dwellings which have come effectually under that compulsory statute, the Common Lodging House Act. We need not enter into extended details in proof of this point. From the mass that is before us, we will give a single instance which is in keeping with the rest.

Captain Hay, one of the Metropolitan Police Commissioners in London, in his return to the Secretary of State for the Home Department, for the quarter ending October 23, 1853, says, that, in the houses under regulation, the lodgers numbered at least 25,000. During the quarter there had not occurred a case of fever in one of these houses, yet before they were under regulation, twenty cases of fever had been received into the London Fever Hospital, from a single house in the course of a few weeks. In the whole of the improved or model dwellings, the exemption from cholera has also been complete. In the epidemic of 1848-9, no case of cholera occurred in any of these houses, though the pestilence raged in all the districts in which they are situated, and there were instances of two, and even four deaths, in a single house, close to their very walls.

#### ART. XVI.—*Legal Protection of the Medical Profession.*

The parallelism between American and French Medicine, as it now exists in the former, and as it did exist in the latter for ten years subsequent to the Revolution of 1789, may be illustrated by an extract from an eloquent discourse recently delivered in Cincinnati by Professor C. G. Comegys, M. D., upon "The Legal Protection of the Medical Profession" :

History demonstrates to us that our profession has never flourished in full success except it has had the support of public law.

Thouret, Napoleon's Minister of the Interior, in his report in 1803, on the subject of a medical law for the Empire, has fitly set forth the anarchy that must prevail in the absence of all law. The revolution of '89 had overturned all institutions, medicine included. See what a picture he presents of the results of ten years' libertinism : "Men united in society," he says, "have in all times been subject to evils growing out of their intercourse, which has led philosophers to think that society was more injurious than useful to humanity. The utility of this consolatory art has been felt amongst all nations and in all ages. There

exists no government which does not render it a favorable support, and which is not interested in its progress. Anarchy only, which respects no institution, could ignore the healing art. It belongs to every reform government to restore to this branch of instruction all its ancient splendor and advantageous results. Profoundly penetrated with the necessity of re-establishing order in the exercise of a profession which interests essentially the security of the lives of citizens, the government presents to you a project of a law having for its object the regulation of the practice of this salutary art. Since the suppression of the University in 1792, there is no longer any regulation for the privilege of the practice of medicine and surgery. Those who have studied the art find themselves confounded with those who have not the least notion of it. The lives of the people are in the hands of greedy and ignorant men. The most dangerous empiricism and shameless charlatanism, impose everywhere upon credulity and good faith. No proof of knowledge or skill is required ; and the cities and the country are infested with quacks who deal out poison and death with an audacity which our present laws cannot suppress. The most murderous practices have usurped the place of the principles of the obstetrical art. Impudent barbers and bone-setters assume the title of Doctor, to cover their ignorance and greediness. Never has the list of secret remedies, always dangerous, been so extensive, as since the suppression of the Faculty of Medicine. It is then urgent to destroy all these evils at once, and to organize a uniform and regular mode of examination and reception for those who wish to devote themselves to the curing of the sick.\*

This language, gentlemen, was that of Napoleon in 1802. Is it not an exact picture of the condition of things in the State of Ohio, and in all of our Western States ? Would to God that some statesman among us, like Thouret, would propose and advocate a law, for a professional good here.

France is now confessedly, at the head of the civilized world in medical knowledge and discovery. Her amphitheatres are crowded with students of all nations. This is the fruit of her Medical Law. England, Germany, Austria, Russia, Italy, all have conferred every needful regulation upon the Medical profession, and as one result, the rate of mortality in most of those countries is decidedly less than in our own.

The liberty of our nation is stained with libertinism. In Medicine, save that regularity which the profession itself maintains, all is confusion.      \*      \*      \*      \*      \*      \*      \*

If you are rapidly seeking and expecting success ; if your honors are to come easily, and your emoluments abundantly, I am pained to say that you have chosen the wrong road. Your honorable gains, the result of years preparatory study and observation, will be far overbalanced by the success of a single nostrum. By employing the public press, the quacksalver will, in a single year, gain more from his patent medicines than you can gain in years. While the immortal Bichat, the modern creator of Anatomy, wearily trudged the streets of Paris in his round of professional duties, the author of the rob-syphilitic rolled by in his chariot and four.

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\*Renouard's History of Medicine,

What need of your severe mental toil ; your disgusting cadaveric researches, your anxiety for graduation ; the years through which you most anxiously wait ere a bare remuneration at last comes, when with a few dollars to paint the tin and pay the printer, you can post and advertise yourself as demi-gods in medicine, holding the secrets of remedies that are infallible in the most desperate diseases ? You have only to enter any large city or town, and proclaim that you have a new method for curing consumption and have met with an unbounded success, and money will pour in upon you on your own terms, and a single month will result in more than a year of regular practice.

But what of this success ? It is merely money, mendaciously, dishonestly obtained—the fruit of falsehood acting upon an honest, though unfortunate public credulity. It curses the receiver and disgraces his family, while, at the same time, it dishonors a noble cause and disheartens the honest and true medical man. His title and emoluments thus so easily stolen, what is it that binds him so devotedly to his noble pursuit !

\*       \*       \*

I see no way for success but to get a law that shall recognize all who are now in practice, whether they are regular or irregular practitioners—whether they have diplomas or not ; but no new man to be allowed to practise until he has stood the test of examination.       \*       \*       \*

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#### ART. XVII.—*State Medicine in Germany, France, &c.*

[In the October number of the British and Foreign Medico-Chirurgical Review, there is an account of State Medicine, condensed from nine recent European publications, the more important parts of which will doubtless interest the readers of the New Orleans Medical and Surgical Journal. Is it not reasonable to suppose that some time during the present or some succeeding generation, there will be a reaction in the public mind throughout this Republic, in favor of medical reform, legislation and science ? Ameliorations, such as the following, are necessary for republicans as for others:]

*Germany.*—A complete system of medical organization exists in Austria, Prussia and the other German States. The principles of this system are the same throughout ; modifications in details are, however, met with, as may be supposed, in different parts of so extensive a range of Europe as that over which the German language is spoken.

A Supreme Medical and Sanitary Council or College exists in the capital of each kingdom or state, forming part of the office of Ministry for the Interior, and is presided over by the Minister of Public Instruction. This central council, at the seat of government, superintends all medical affairs, and has the supervision of all the provincial and district medical colleges or sanitary boards. To take an example, we may state



that the Supreme Medical Council of Berlin consists of certain members, appointed for three years and eligible for re-appointment. Of these, the majority are medical men, the following nine well-known names being those of the medical members of the Supreme College of Medical and Sanitary Affairs in Berlin: Klug, Könen, Horn, Link, Kluge, Wagner, Mitscherlich, Casper and Froriep.

In the principal city or town of each province there is established a provincial medical college, consisting of a president, (the governor, or principal councilor of state) two physicians, one surgeon, one accoucheur, one apothecary and one veterinarian. This provincial council has to forward periodical reports to the supreme college, and is empowered to require the aid and coöperation of the councilors of state and the police authorities, in carrying out its objects.

In every city, also, having more than five thousand inhabitants, there is, in addition to the provincial council, a special sanitary commission.

The efficient instrument, the right hand of these councils, without whose active and skilled coöperation their sanitary regulations would be so many dead letters, is the medical officer—the *physicus*, who, according as he resides in a capital, or a city, or in a rural district, is entitled *stadt-physicus* or *kreis-physicus*. The qualifications, duties and obligations of this official, we propose here to lay before our readers.

The *physicus* is subordinate to his own medical council, and is amenable to the jurisdiction of the Minister of the Interior. He is charged with the execution of all the laws regarding the public health, and medical affairs in general. He is expected to follow the advances of science, that he may be enabled to make them bear upon questions relating to the public health. It is the more incumbent upon him to excel in acquirements and accomplishments, inasmuch as, having the precedence of all other medical men, he should be able to gain their respect and esteem, both by his personal conduct towards them, and by his counsel and assistance in promoting the common welfare.

The general qualifications required for the appointment of the *physicus* are good moral character and the profession of the Christian religion; no Jew being allowed to receive the appointment. The special qualifications of a candidate for this office are attested by the Supreme Medical College, before whom he has to undergo an oral and a written examination in the principles and practice of medicine, distinct from the examination *ad licentiam practicandi*, and to whom he is required to submit a thesis upon some medico-legal question.

The appointment is made by the Government, and is accepted under the obligation of an oath of loyalty to the Crown, and of faithfulness in the discharge of the duties of the office, which confers a certain rank and title, that of "Councilor of Health," equivalent to that of "Councilor of Justice," (*Gerichtsrath*.)

The remuneration of the *physicus* is very much below what has been given to the English officers of health—averaging only about thirty pounds per annum—while the obligation and duties arising out of the appointment are extensive and onerous. The *stadt-physicus* or *kreis-physicus* is required to reside in his specified district or city, and, so far as practicable, to be within call on all occasions on which his services may be required. He may not be absent himself without the permission

of the local authorities, and is then bound to find a competent substitute. The physicus is exempt from serving on juries. He is required to wear a particular uniform when appearing in the performance of his public duties. The physicus has the superintendence or oversight of all other physicians, surgeons, apothecaries, mid-wives, barber-surgeons, and other medical persons resident within his city or district; it is his duty to see that they perform their duties efficiently, or restrict themselves within their several limits, as prescribed by law. He is required to report to the Medical College the fact of any unqualified person undertaking the practice of medicine or surgery. It is the duty of the physicus to see that the medicines of the apothecary are pure, for which purpose he is required to make special visitations and inspection. He must report to the police authorities, periodically, any alterations in the prices of drugs. He has to take care that the business of the apothecary be not interfered with by medical men dispensing their own medicines; and on the other hand, he has authority to protect medical practitioners from encroachments by the apothecary. In general, however, the limits of practice are so distinctly observed, that little occasion occurs for the exercise of this authority.

An acquaintance with prevailing diseases, whether in man or in animals, is expected of the physicus. To gain this, he is empowered to require reports of cases attended by other practitioners. It may be noticed that this forms one of the immediate advantages of the appointment of officers of health in the British metropolis, other practitioners having in most of its parishes received instructions to give notice to the officer of health, of the existence of epidemic disease, or of any other circumstances affecting the public health. With the same view, the physicus is directed to make himself familiar with the occupations and habits of life of the residents in his city or district, as they may affect their health; he must also inform himself upon the topographical and meteorological features of his district; he must on all occasions be ready to give his advice to the authorities in adopting measures for the prevention of the spread of disease. With the same object, the *kreis-physicus* must furnish to the Provincial Medical College periodical reports upon the state of the public health of his district, giving a full account of the prevailing diseases, their probable cause, &c. He may demand the aid or consultation of other civil or military medical officers when in doubt upon any question affecting the public welfare, or when, from spread of diseases, the cases are more numerous than he can himself attend to.

The physicus cannot refuse his medical services to any one who may require them. He is permitted to receive remuneration from the rich; for his attendance upon the poor he has a claim upon the public purse. He has the medical care of all paupers, prisoners or soldiers, not under the special charge of any other medical officer. Our own health officers have not this onerous charge.

Throughout Germany, the physici are the special medico-legal officers, to whom is confided the investigation of all medico-forensic matters. As already stated, each country is divided into districts, having severally a physicus, or "*Gerichts-Arzt*," with his associate surgical officer (*der gerichtliche Wundarzt*.) These officers are paid by the Gov-

ernment. The respective tribunals or judges may require their services in all inquiries touching sudden or violent deaths. A legal dissection is made by them in the presence of the judge, and a written statement of what is then found in the body is dictated by the physicus. In all deaths from poisoning, the œsophagus, stomach and duodenum, having been carefully tied, are removed, and separately examined by the physicus in conjunction with the apothecary.\* A report of the result is made to the tribunal. The physicus is required to investigate all cases of rape, simulated disease, or mental diseases, and to report thereon to the judge.

If the case be very complicated, or if doubts still remain, the tribunal send the report of the medical officer to a provincial college, together with all other depositions. These colleges are required to report thereon to the tribunal. If still any doubt or difficulty should present itself to the judge or tribunal, there is yet a higher authority to which application can be made—viz: the “Superior Medical College,” the central authority for the whole kingdom, having its seat in the metropolis. To this highest authority the reports of the medical officers and of the provincial colleges are referred, for the purpose of obtaining a “*super arbitrium*.”

Within the last few years, the proceedings are carried on publicly, and before juries, in all important criminal trials. The “physicus” is required to appear before the jury, and *vivâ voce* to explain his report and opinion. The accused may also call other medical opinion. “Not seldom, an opposition between the public and private medical men takes place, the public being present; which I cannot find very advantageous for the dignity of our state and science,” observes the celebrated Casper, of Berlin, in a communication with which he has favored the writer. Dr. Casper has been thirty years a member of the “Superior College” at Berlin, and upwards of fifteen years “Stadt-physicus” of Berlin.

The forensic duties of the *physicus* are under the direction of the supreme judicial courts, and of the police authorities of the district, or of a local magistrate. With the assistant forensic surgeon, the physicus, in the event of sudden or violent death, is required to repair, without loss of time, to the spot where the body is to be examined. The judicial inspection is required to be made according to special instructions issued to that end. In cases of poisoning or adulteration of food, the physicus shall very carefully and scrupulously investigate the case, with the assistance of a qualified apothecary. A conjoint report shall be signed by these three officers—viz: the physicus, the surgeon and the apothecary—not only to verify the truth thereof, but also to divide the responsibility of the consequences that may thence follow.

When his presence at a legal dissection is required by a magistrate, the physicus is ordered to do so with all possible expedition, and shall see that the forensic surgeon be provided with the requisite instruments in proper condition for use. If the body to be examined be that of a still-born infant, all outward appearances from head to foot must be recorded; the degree of its development; the state of the tongue as to protrusion from the mouth; the condition of the latter, whether con-

\* The German apothecary corresponds to our pharmaceutical chemist; he passes a rigorous examination, and is debarred from medical practice.—Ed.



taining mucus or any foreign substances; the state of the navel string, whether tied, cut, or torn. In examining a body, the state of the heart and large vessels, whether full or empty, as well as the exact condition of the larynx, lungs, &c., should be accurately noted. The organs in all the cavities should also be accurately observed. All wounds of the internal organs should be closely compared with those discovered externally, in order to determine whether the latter have been mortal.

In large cities or towns, there are provided also, for the especial purpose of facilitating the ends of justice, one or more police *physici*, whose functions are in some measure indicated by the epithet, and will further appear in our subsequent remarks. The distinction is, however, one rather arising out of the practical requirements of cities, than one established by law. The police physicus is more directly connected with the police department, and is under the jurisdiction of the President of Police, to whom he must communicate all matters relative to the public health that may come under his notice. The police physicus is invested with authority to make inquiries, in the discharge of his duties, without the attendance of a police officer; in so doing he is, however, required to appear in a police uniform. If any case of illness should come under his notice, having originated in a quarrel or fight, the police physicus shall take notice particularly whether life is endangered by the injuries that have ensued; in which case he is expected to give information thereof to a magistrate. If it should come to his knowledge that any individual has died suddenly, without previous illness, and there be any ground to suspect that death has not arisen from natural causes, it is the duty of the police physicus to investigate the case, and ascertain whether there be sufficient reason to demand a magistrate's order for dissection. Any traces or indications of poisoning, must be carefully looked for by him. The carcasses of animals that have died of epidemic disease, or from any prevalent or similar cause, shall be opened before the police physicus, who shall make a written statement of the internal appearances, particularly of the stomach, noting at the same time what medicinal or therapeutic measures have been adopted during the life of the animal.

If, in the course of his dissections, the police physicus shall meet with any unusual specimen in natural history, or any monstrosity, he shall transmit the same to an Academy of Sciences, or to a Professor of Anatomy.

The police physicus must prepare for the President of Police a quarterly report of all the judicial investigations and dissections performed by him during the quarter. In the discharge of his duty of examining the bodies of still-born children, he has opportunity of controlling the practice of mid-wives, and noticing any neglect of duty or transgression of the legitimate limits of their practice.

The police physicus has the superintendence of all the insane, of all prisoners, the surgeons of jails, to see that these latter act humanely towards prisoners, in the discharge of their duty. He has the particular supervision of, and control over, the forensic surgeon, and is required to ascertain that the latter performs his duty, in taking such measures for the prevention of syphilis as are indicated by science. For this purpose he is to call for monthly oral and written reports of all such

cases, and from time to time to make a personal inspection of the manner in which this duty is performed. By these means he will become acquainted with the degree to which venereal poison is spread; he shall make experiments thereon, and shall embody the results of these reports and observations in his quarterly reports; wherein, also, he has to state the number of prostitutes, either in or out of brothels, together with the number of cures of venereal disease.

The objects of sanitary police, which become the immediate duty of the medical colleges and the physici, are all those measures which may be necessary for the removal or suppression of the cause of disease, either as affecting individuals, or as spreading through a community. For this purpose, the physicius has authority, in the case of infectious maladies, to enforce the separation of the sick from the healthy. The inspection of dwelling-houses, as to their ventilation, &c., also forms part of their duty. The sanitary regulations are directed to the prevention of hereditary diseases, by the prohibition of unequal or premature marriages, and marriage between near relations; by the care of infants and by the training of youth. The Prussian laws, in these last matters, are far more arbitrary than we in England should deem consistent with the liberty of the subject. The laws regarding pregnancy, abortion and infanticide, are among the subjects that come under the consideration of the sanitary police, as are also the examination of articles of food, the inspection of slaughter-houses, breweries, &c.

The police physicius is required to take cognizance of all poisonous substances employed in arts, trades, confectionary, &c., or in the manufacture of earthen-ware utensils. The regulations respecting interments are under the control of the sanitary police; as also the dead-houses.

Vaccination comes within the province of the police physicius, who must superintend its performance by other medical men, and use every means to remove prejudices or other obstacles to its extension.

Upon these and all other matters coming within the scope of his public functions, the physicius must present to the Medical College a quarterly report, besides periodical and special reports to the public authorities, when called for. These reports must record the occurrence of epidemic disease, with suggestions on the means of their prevention. Instances of mal-praxis must also be reported.

The preceding summary includes all the most important duties and responsibilities of the German Physicius, and the legal enactments respecting medical, sanitary and medico-legal affairs in the German States.

(*To be continued.*)

#### ART. XVIII.—*Oriental Medicine, Ethnology, &c.*

[THE following gleanings from the United States Expedition by Com. Perry, (compiled by F. L. Hawks, D. D., LL.D., 4to. ed., 1856,) will, it is believed, be acceptable to the readers of the New Orleans Medical and Surgical Journal:]

The camphor tree lives to a great age. Siebold visited one which Charlevoix had described as having been seen by him 135 years before. It was healthy and covered by foliage, with a circumference of 50 feet. The country people make the camphor by a decoction of the roots and stems cut into small pieces—61.

The physicians of Japan have not availed themselves at all of post-mortem examinations, either to investigate disease or to study anatomy.—56.

A superstition of the *Sintoo* religion tabooed all who had defiled themselves by coming in contact with a dead body. Tanners, curriers, leather-dressers—in short, every one in any way connected with the making or vending of leather—are placed under ban or interdict. Those of this proscribed class cannot dwell in the towns or villages that are occupied by the other classes; they are not even numbered in the census of the population. They dare not enter an inn, tea-house, or any public place of entertainment. If they are traveling and want food or drink, they must wait outside of the wall of the house, and there be served in their own bowl or platter; for no Japanese, not of their own class, would ever touch or use the vessel out of which they had taken food. Out of this class come the public executioners and gaolers throughout the empire. In short, they are shunned like the leper of old.—14.

To come in contact with death [the dead] is deemed pollution. There are, however, in Japan original medical works constantly appearing, and translations are also made of all such as they can obtain in the Dutch language. Acupuncture and *moxa* burning are both used in Japan, and are native inventions. They have an original treatise on the first, and the proper cases for its use. Their drugs are mostly animal and vegetable; they are too little acquainted with chemistry to venture upon mineral remedies. They study medical botany, however, with great attention, and their remedies are said to be generally efficacious. Some of their medicinal preparations are very remarkable, producing most singular effects.—56.

The chief diet of the inhabitants of Simoda consists of fish and vegetable food. There are poultry, chickens, geese and ducks, and some few cattle, but the latter are used only for beasts of burden, and their flesh is never eaten. Rice, wheat, barley and sweet potatoes, are the chief articles, although Irish potatoes, buckwheat, Indian corn, taro, beans, cabbages, cresses and egg-plants, are produced to some extent.—405.

The climate of Simoda [an imperial city of Japan] is liable to the ordinary affections of temperate climates, but there seems no reason to suspect that it has a special tendency to any epidemic diseases.—414.

The Japanese and the Lew Chewans differ slightly, the latter being more effeminate and somewhat less intelligent. They have, however, such strong resemblances that it is almost impossible to resist the conviction of their sameness of origin. They have the same height and very similar features. In both, the head is oval, approaching in form the European, the frontal bones rounded, and the forehead high, the face oval, and the general expression mild and amiable, the eyes large and animated, though more so in the Japanese than in the Lew Chewans, the irides in both are dark brown or black, the lashes long, and the



eyebrows rather heavy and arched. The long angular form of the internal canthus of the eye is seldom seen. The nose is generally handsome; the root is not depressed as in the Chinese or Malay, and the nostrils are not so widely dilated. The cheek bones are not very prominent, and consequently there is a want of that squareness of face which is so remarkable in some eastern races. The mouth is rather large, the teeth broad, very white and strong, and the chin neatly cut. One mark the Japanese and Lew Chewans have in common to distinguish them from the Malay or Chinaman: it is the possession of a strong black beard, which the latter are destitute of to any extent.

The men in Lew Chew, in youth, have almost invariably a rich jet black beard, which in age becomes as white as snow. The higher classes allow their beards to grow to great length, and cultivate them with great care and pride, while the inferior people are obliged by law to cut theirs. The moustache is generally worn, but seldom grows luxuriantly. The hair is ordinarily of a deep black, and is allowed to grow in long locks behind and at the sides of the head, while the middle of the pate is shaved clean. The hair being well oiled and gathered up from the sides and back, is formed into a large knot and affixed to the bald place in the head with pins, either of gold, silver or brass, according to the rank of the wearer. The Lew Chewan male has generally a well proportioned figure, with broad and largely developed chest, narrow hips, and a slim waist and neck. A deformed person is a very rare sight in Lew Chew. The costume is neat, graceful and suitable to the climate—a loose robe, with wide sleeves gathered at the waist with a girdle.

The higher classes are well instructed in the learning of China, whither the literati and professional men, especially the physicians, are sent to finish their education. The literature, whatever they possess, is derived from the Chinese and Japanese.—314, 315, 316.

Great reverence is paid to the dead in Lew Chew, where they are put in coffins in a sitting posture, and, being followed by the friends and relations and a procession of women in long white veils, which cover their heads and faces, are interred in well-built stone vaults, or tombs constructed in the sides of the hills. After the body has been interred for a period of seven years and all the flesh is decayed, the bones are removed and deposited in stone vases, which are placed upon shelves within the vaults. The poor people place the remains of their dead in earthen jars, and deposit them in the crevices of the rocks, where they are often to be seen broken and disarranged. Periodical visits are paid by the surviving friends and relations to the burial places, where they deposit offerings upon the tombs. On the first interment of the rich dead, roast pigs and other articles of food are offered, and after being allowed to remain for a short time, are distributed among the poor.—319.

A very singular custom of self-punishment, even unto death, prevails among all the officials of Japan. When one has offended, or even when in his department there has been any violation of law, although beyond his power of prevention, so sure is he of the punishment of death, that he anticipates it by ripping up his own body, disemboweling himself, rather than to be delivered over to the executioner. In fact he is encouraged to do so, inasmuch as by his self-destruction he saves his pro-

perty from forfeiture and his family from death with him. With many of the high officials, it is a point of honor thus to kill themselves on any failure in their departments; it is construed into an acknowledgment that they deserve to be put to death by the Emperor, and their sons are often promoted to high positions, as a sort of a reward for the father's acknowledgment of guilt.—17.

*Death of a Chinese Opium-Smoker on board the U. S. Ship Susquehanna.*—When Mr. Williams came from China to join the squadron, at Lew Chew, as interpreter, he brought with him an old Chinaman, who had been his teacher, and who, it was supposed, might be useful in future operations; but it was soon apparent that the old man's race was nearly run. He was a victim to the habit of opium-smoking, which he was attempting to abandon. The consequence of this effort, and the effects of sea-sickness on board the *Saratoga*, prostrated him so completely that no medicines had any effect, and he sank into a state of nervelessness and emaciation painful to look upon. For a week before his death, his condition was most pitiable; every joint in his skeleton frame seemed to be in perpetual motion; his face was a ghastly yellow; his cheeks sunken on the bones; the eyes wild and glassy; and his mind in a state of semi-madness. Death, when it came, was a relief to the poor old man, as well as to those who saw him die. On the day after his decease, the ship presented that striking picture, a funeral at sea. The Commodore and other officers stood around, with a large part of the crew, while the chaplain committed his body to the deep until the day come when "the earth and the sea shall give up their dead."

A more frightful example of the terrible effects of opium, it would be difficult to find. It exceeded in horror all the loathesome and repulsive results of the intoxicating use of drinks. *Delirium tremens* is horrible enough, but the last scene of this old opium-smoker was more horrible still. There was something revolting also in the conduct of the Chinese on board the ship. They manifested not the least sympathy with their dying countryman. For a day or two before he died, not one of them, with the exception of one of the Commodore's servants, would go near him; and on the last night of his life, when two of the deck coolies had been ordered by the captain to remain in the room, and were obliged to obey, they squatted down in the corner most remote from him, and never once approached him. Some of the quarter-masters gave him what he needed, and were with him when he died.—195.

ART. XIX.—*Medical Education.*

Edward Warren, M. D., of Edenton, S. C., who delivered the Annual Address to the Medical Society of the State of North Carolina, in the Senate Chamber, at Raleigh, May 14, 1856, expresses himself strongly upon the subject of medical education. His address, the most extended paper in the Transactions, occupies 22 pages. The Society is composed of 101 permanent and 22 honorary members.

"The first step in this work of improvement," says Dr. Warren, "consists in an examination of the causes which have operated against the success of the various plans already proposed. These plans have failed for the obvious reason that they have not struck a blow at the root of the evil. An effort has been made to purify the stream without cleansing the fountain. It has been attempted to enlarge and adorn the temple before extending the base upon which the whole superstructure is reared. We have striven to lengthen the sessions of the schools, to secure a greater amount of primary instruction for Medical students, and to elevate the standard of graduation with those who aspire to the degree,—but we have done nothing towards improving the Faculties of the various institutions of the country. No standard of qualification has been established for those who aspire to be teachers of medicine; no change has been suggested in the manner of selecting Professors; no plan has been proposed by which this privileged class can be reached and held responsible to the public; and until something is done in this particular, every reform is precluded and all progress becomes impossible. In many instances Faculties are self-perpetuating bodies, either boldly claiming the power to elect their own members, or covertly exercising it through the instrumentality of a Board of pliant trustees.—In other cases, vacancies are supplied before their existence is generally known, and even when the field is ostensibly thrown open to honest rivalry, all competition is really prevented by the existence of some private understanding in regard to the claims of a particular individual, and the place is given not to the man who presents the best testimonials of qualification, but to him whose social relations, sectional position, political principles, or influential connections, seemingly render him the most available. Trustees, in the absence of any certain means of ascertaining who is the best prepared for the duties of the station, discard that consideration entirely, and appoint that candidate whom they deem most likely to render the school popular with the public. In this way ignorance and dishonesty are inaugurated into office, clothed with scholastic dignity and prerogative, and secured in an immunity against censure and punishment for life. The fruits of this unwise and flagitious policy are to be seen in that shameful rivalry between opposing schools, which has so long been the bane of the Profession in this country, and that ignorance and contracted spirit which have but too often distinguished and disgraced its members. The advantages of a different and a wiser course, are plainly visible in France. Although many changes have taken place in the political sentiments of the French, yet, amid all the outbreaks of popular violence, the fall of dynasties, and the establishment of new governments, an intellectual democracy has been preserved,



which is an honor and an ornament to the nation. There the humblest man can rise to the most exalted station ; the poorest student may carry a Professor's commission in his note book ; place and preferment are the reward of merit alone. It is through the gate of the "Concours" only, that a man can be advanced to any station of honor and emolument. The rivalry induced in this manner stimulates to exertion, and conduces most materially to the advancement of every department of learning. Medicine feels the invigorating influence of this most healthful system, and marches on *pari passu* with its kindred sciences towards development and perfection.

"This plan of testing by rigid examination the claims of those who aspire to advancement, is one of the wisest, fairest, and least objectionable that the ingenuity of man has ever suggested. It not only secures the ablest Physicians for offices of trust and honor, and accomplishes the most important results by the study and labor called forth from every competitor, but it has a moral effect, the value of which cannot be estimated in words. It directs the highest talent of the country towards Medicine as the channel through which fame and advancement can best be secured ; it affords to the aspirant for honors a security in the pursuit of them which nothing but the assurance of meeting with evenhanded justice can inspire ; it gives to the successful candidate an appreciation of the dignity of his position, and a consciousness of the extent of his powers, which stimulate him to higher hopes and more unwearied labors ; it calls out the admiration and confidence of the public to an extent which renders the Professor absolute within his legitimate sphere, and thus increases his usefulness and extends the influence of the Profession. In a word, it is a system founded upon principles of liberality, justice, and good sense, of which the present prosperous condition of Medicine in France is the legitimate result, and from whose successful and extended operation, untold blessings are yet to be secured to the Profession and the world.

"If this plan has operated well in France, why may it not be equally successful in America ? Why may it not be applied where its regenerating influence is most imperatively demanded ? What might we not anticipate for Medicine, if the vigorous intellect of its votaries in our own land were forced into this active collision, developed by these long and thorough processes of training, and brought up to such a standard of excellence as is demanded by the most useful system ? Let us hope, gentlemen, that the day is not distant, when an answer will be given to these questions of so practical and satisfactory a nature that neither ignorance, prejudice nor cupidity shall continue to exercise an influence upon the destiny of the Medical Profession in America, or to mould the character of those who aspire to its dignities and emoluments.—When the schools have thus been revolutionized and improved ; when the fountains of learning have been cleansed and purified ; when the great pillars of the Profession have been rendered solid and secure, then, we may indeed hope for a bright day in the history of Medicine—a day which shall witness the complete triumph of those principles of reforms, and plans of improvement which are so necessary to the prosperity of our noble vocation."

## REVIEWS.

REV. I.—*Medical Jurisprudence*. By ALFRED S. TAYLOR, M. D., F. R. S., Hon. M. D. Univ. St. Andrews, Fellow of the Royal College of Physicians, and Lecturer on Medical Jurisprudence and Chemistry in Guy's Hospital. Fourth American, from the Fifth London Edition. Edited, with additions, by Edward Hartshorne, M. D., one of the Surgeons to Will's Hospital, etc. Pp. 697, 8vo. Philadelphia: Blanchard & Lea. 1856.

Crime, engendered by the ceaseless war of the evil passions and aggressive purposes and tendencies of humanity, has arrayed person against person, family against family, nation against nation, in all ages. To prevent the perpetration of crime by the punishment of the guilty, to protect private and public rights, and secure individual and public security, are the great and benevolent finalities of social and political science, jurisprudence and civilization. Nevertheless, moral evil, under varied phases, recurs with a regularity approximating the uniformity which reigns in the physical world.

The theoretical progression of modern civilization towards an ideal perfection has not been, perhaps, equally great in actual practice. In civil and criminal jurisprudence, still more than in medicine, these two kinds of progression do not invariably keep pace.

In the dark ages, the ordeal—as the dancing blind-folded among red-hot plough-shares, the single combat, the mere opinion of neighbors ignorant of the facts of a supposed case, or the oath of the party accused—was deemed good and legal evidence of the guilt or innocence of an alleged criminal; and such juridical trials were dignified by calling them the judgment of God—*judicium Dei*.

No juriconsult of the present day would formally announce the doctrine, that right is founded on might. Yet, in former times, Sir John Fortesque, Chief Justice of the Court of King's Bench, in the reign of Henry VI., author of the celebrated treatise, "*De Laudibus Legum Anglicæ*," and other works favorable to liberty, laid down the following theory of the right to property, namely: "If an Englishman be poor, and see another having riches which may be taken from him by might, he will not spare to do so."—(Hallam's *Mid. Ages*, ii. 297.) Codes, statutes and courts, do not now adopt this physical argument. Nevertheless, the rights of property are in many cases, by other means known to courts and lawyers, invaded, or rendered uncertain; so that the difference between the tenure of physical might and legal right is often virtually annihilated in practice.

Now, after centuries of progress in codification and organic and statutory legislation, it may be doubted whether crime has correspondingly diminished—whether the number of criminals arraigned before courts, who elude the punishment due their crimes, be not as great as in the dark ages, when the judicial combat, or the opinion of a certain number of *compurgators*, or the prisoner's oath, was deemed altogether conclusive in criminal jurisprudence.

Dr. Hayes, who accompanied Dr. Kane in the late Polar Expedition, says, in a lecture published in December, 1856, on the Esquimaux Indians, with whom he remained two years and a half: "They have no government. They have a chief (Nalegak) in name, but do not recognize his authority. Every man does just as pleases him best. They are thoroughly Democratic. Crime is not regarded as a moral delinquency, only as a violation of public opinion, dictated by selfish interest, and punishment is only inflicted by private hands, as an act of vengeance. They are very peaceable in their social relations—quarrels seldom occurring. When one thinks he has been wronged or insulted by another, he challenges him, not to mortal combat, but to a war of words. The friends of the parties are summoned. Taking their stations in a circle, the combatants enter the lists, and the challenger commences a satirical song, extempore, keeping time with a seal-skin tamborine. He having finished, his opponent commences in the same strain—and he who can make the audience laugh most at his cutting jests, gains the victory."

But it is time to pass from the polar regions to Dr. Taylor's *Medical Jurisprudence*—a work of standard character, which, having passed through five editions since its first publication in 1848, and, which having been much enlarged and diligently revised by its learned author, in 1854, needs no commendation, and has little to fear from censure.

It is not, therefore, intended on this occasion to review this work in a formal manner. A few remarks upon one or two fundamental topics alluded to in this, and in other works on Forensic Medicine, will, it is hoped, be acceptable to the patient medical jurist.

Upon the subject of circumstantial evidence, Dr. Taylor observes: "The common rule respecting the admissibility of this kind of evidence, applies to circumstances of a medical, as well as those which are of a physical or moral kind. Medical circumstances, when properly observed, are often of the highest importance. There are many cases on record in which an observance of slight and unexpected circumstances, by medical men, has led to the detection of offenders. In the Life of Sir Astley Cooper, it is mentioned, that when called to see Mr. BLIGHT, of Deptford, who had been mortally wounded by a pistol-shot, in the year 1806, he inferred from the examination of the localities, that the shot



must have been fired by a *left-handed* man. The only left-handed man near the premises at the time was a Mr. Patch, a particular friend of the deceased, who was not in the least suspected. This man was afterwards tried and convicted of the crime ; and he made a full confession of his guilt before execution.”—211. In a preceding page, Dr. Taylor remarks : “ It may be said that circumstantial evidence is wholly foreign to the duties of a medical jurist ; but I cannot agree to this statement ; there are very few in the profession, who, when summoned to aid justice, by their science, in the detection of crime, do not seek for circumstances by which to support the medical evidence required of them. A *practitioner would certainly be wrong to base his professional opinion exclusively upon circumstantial proofs.*”

Dr. Taylor’s estimate upon this subject is, perhaps, too low. The medical witness will find in many cases, that circumstantial evidence is not only suggestive as a clue in directing, but in confirming, his scientific researches, and also supplying deficiencies in the latter. Hence, it may be allowable in this place, to offer a summary of the nature, scope, and value of this sort of evidence.

Before entering upon this subject, it may be remarked, that in the trial of the late Dr. Webster, who was convicted and executed for murder, in Massachusetts, in 1850, the scientific evidence itself was virtually almost entirely circumstantial, in regard to the *corpus delicti*.

In the most celebrated trial in modern times, in England, in the case of Palmer, recently executed for the murder of Cook, by poison with strychnine, neither direct testimony, nor chemical evidence, was adduced, (the poison not having been detected in the deceased, though sought for) yet the circumstantial proof was deemed conclusive, having established the *corpus delicti*, after an investigation of unparalleled duration and minuteness of research by the bar, the bench, the jury, and the medical witnesses.

The complex, multitudinous, and yet deficient elements of circumstantial evidence in Palmer’s condemnation, will perhaps scarcely bear the scrutiny of posterity, as juridical precedent. Had he even confessed his crime under the gallows—had he even confessed the numerous atrocious murders which he was supposed, with reason, to have committed, still *the trial, as a trial—the conviction, as a legal one*—is not devoid of the possibility of error. That Cook ever took strychnine, from any person whatsoever, is but conjecture. In that regard, the symptomatic history afforded but a presumption—the chemical history, a negation—the circumstances, a strong probability, to which, however, the character, words, actions, and apparent motives of Palmer lent additional force.

In the Webster case, all that had been proved by circumstantial evi-

dence was subsequently confirmed by his confession ; while in the Palmer case all constituting the *corpus delicti* was denied by the criminal to the last moment of his existence.

A learned member of the Louisiana bar has opportunely communicated, for publication in this Journal, the following synopsis of the medico-legal import, nature, and validity of circumstantial evidence. He says :

We are aware that, of late days, nothing has been more common than to animadvert with severity upon circumstantial evidence, as a dangerous and false medium of proof ; and that many enthusiastic advocates of mild laws, less regardful of the interests and safety of the community than of the person of the criminal, have declared that in no case should circumstantial testimony alone be allowed to be conclusive of guilt, to justify conviction and punishment.

We believe such sentiments can prevail only in connection with a very imperfect conception of the true character of circumstantial evidence, or an ignorance of the well-established rules of law which govern and control its conclusive influence in criminal proceedings.

We believe such sentiments are dangerous, too, as they are erroneous. The greater the crime, the greater the secrecy with which it is perpetrated, and therefore the least susceptible of direct proof. To require direct evidence to secure conviction, would be to announce the dissolution of society, and leave all crimes without restraint. It has been gravely asserted, that circumstantial evidence is liable to the double uncertainty, proceeding, first, from the danger of perjury by the witnesses who swear to the facts, and, second, the mistakes of those who are to reason upon and compare the facts supposed to be proved, whereas direct evidence is subject only to the former uncertainty. This is fallacious. Human ingenuity is not equal to the invention and contrivance of a series of false and feigned circumstances, each agreeing perfectly with the other, and all agreeing with all other known collateral circumstances. To do this, a foresight and vigilance are requisite, for which no mind is competent ; for, bring a stubborn truth into contact with the best and most skilfully-constructed edifice of falsehood, and down comes the building. When the circumstances proved are numerous, and testified to by different witnesses, and together form a chain of evidence, and every new discovery falls easily in and connects itself with what was before known, there remains scarcely a possibility of deception by perjury or imposture. We believe, then, that a variety of circumstances, thus sworn to, each and all concurring to establish the hypothesis of guilt, and to be accounted for on no other hypothesis, affords a much surer and safer basis for conviction, than the positive declaration of any witness to the actual perpetration of the crime.

We have said that the sentiment of opposition to circumstantial evidence, as a medium of proof to justify conviction in criminal cases, can only prevail with those who are ignorant of the rules now perfectly established, which control its conclusive operation in the administration of criminal justice.

The rules are as follows :

*First. The circumstances from which the presumption of guilt is to be drawn, must themselves be fully established.*

*Second. All the circumstances proved must be consistent with the hypothesis of guilt; if any one established fact be wholly irreconcilable with that hypothesis, the hypothesis must be rejected.*

*Third. The circumstances proved must be of a conclusive character and tendency.*

*Fourth. The circumstances must, to a moral certainty, actually exclude every other hypothesis but that of guilt.*

*Fifth. The proof of circumstances, however numerous, of a tendency, however strong or conclusive, to indicate guilt, avails nothing, unless the fact that the crime has been actually perpetrated be first established.*

*Sixth. The fact that the crime has actually been committed by some one, must be proved by positive and direct evidence, and in such a manner that there is not the least doubt as to the act, for so long as there exists the slightest doubt as to the act, there can be no certainty as to the agent.*

These are the rules, in relation to circumstantial evidence, conjoined with medical jurisprudence, in the administration of justice in criminal cases at law, which have been established from wisdom enlightened by the experience of ages. As firmly established are they, as is that rule which declares the presumption of innocence until guilt be proved; or that other humane maxim of our law—that it is better that ninety-nine offenders should escape, than that one innocent man should be condemned. There is nothing arbitrary in the principles upon which these rules are founded. There is nothing artificial in their structure. They are not authority merely, but reason; not law alone, but truth and nature and morality. They have been erected as monuments—beacon lights, to guide the administrators of public justice, in an ocean of circumstantial proof in medical jurisprudence, to the only true channel through which they may safely sail into the haven of conviction.

*Præstare sentem dimitti quam innocentem damnari.*—JUR. CIV.

*Ante omnia enim, de corpore delicti constare, et inquiri debet.*—HUBERUS.

Every erroneous conviction upon circumstantial evidence has been from the violation of one or more of the above-mentioned rules. For example, in Wharton and Stillé's Medical Jurisprudence, (pages 67 et



seq.,) the erroneous conviction of the prisoners mentioned, was, in every case, the result of the violation of some one or more of the now fundamental rules of the law of criminal evidence, in relation to the proof of crimes by circumstantial testimony.

The New Orleans Medical and Surgical Journal has not been unmindful of the department of Medical Jurisprudence. We need an *American Treatise* upon this subject, with a full and liberal geographical range, both in its reports and adjudications, including the anatomical and legal characteristics and relations of the Indian, the black, and the mixed races ; for these might well belong to the chapter upon identity, and under the same, or another division, we might find some learning touching the redhibitory vices and maladies of slaves, both absolute and relative, mental and corporeal, such as our own code lays down ; for the Louisiana Code of Civil Law is in all the South not without authority in such research ; and over the whole Union it is authority in its wise codification upon consistorial jurisprudence, always so intimately articulated with medical study. American works, whether original or annotated, should not studiously ignore the jurisprudence of the territory lying south of Mason and Dixon's line, but regard the Federal motto, *E Pluribus Unum*, as applicable to the scientific unity of the entire country, both in the North and the South. In the latter, the medical juriconsult is without a standard work adapted to the several peculiarities in Southern jurisprudence.

#### A MEMBER OF THE LOUISIANA BAR.

Dr. Taylor, in his chapter on WOUNDS, which constitute one-fifth of his book, maintains that the presence of coagula in wounds proves that the latter took place before death. "The chief characters," says he, "of a post mortem wound are, therefore, 1st, absence of copious hæmorrhage ; 2d, if there be hæmorrhage, it is exclusively venous ; 3d, the edges of the wound are close, not everted ; 4th, there is no sanguineous infiltration in the cellular tissue ; 5th, there is an absence of coagula. But it may happen that a wound has been inflicted soon after the breath has left the body, and while it was yet warm. The distinction between a wound then made, and one made during life, is not so well marked as in wounds inflicted at a late period after death. Observations of this kind on the human subject must of course be purely accidental ; and there are many obstacles to the performance of experiments on the recently dead. I, therefore, selected limbs immediately after amputation."

In Wharton and Stillé's Medical Jurisprudence, hæmorrhage is relied on as a test by which this important distinction can be established. They say : "The amount of hæmorrhage is generally a reliable test of the pe-

riod at which the person was wounded. The chief distinction between hæmorrhage before and after death is, that in the latter case the amount lost is but trifling, and exclusively of a venous character."

Dr. Taylor says that wounds made during life are characterised by "abundant hæmorrhage, often of an arterial character."

All of these criteria are utterly fallacious, as the writer of these lines can affirm, from a vast number of post-mortem examinations in New Orleans. In many cases, *cadavera*, that have died of acute disease, will, in from fifteen minutes to six or more hours after death, freely discharge blood, which coagulates well. In some instances, post-mortem blood-letting may be performed to a large extent, the blood being of a good color, or, if dark, it becomes red, and even of an "arterial character," on being exposed to the air for a few minutes. Many facts establishing these assertions have been long before the public, in this and other journals, while many more remain unpublished. These experiments include some on limbs amputated both before and after death.

Fortunately, in New Orleans "the many obstacles to the performance of experiments on the recently dead," of which Dr. Taylor speaks, do not exist.

Dr. Taylor's experiments upon amputated limbs may be the best that are available in his country, but for many reasons they do not appear to be conclusive. The limbs amputated were, for anything appearing to the contrary, like limbs usually are when lopped off by the knife; that is to say, they were diseased, perhaps gangrenous, devitalized, before the surgical manipulation, and were, of course, drained of blood immediately after the operation which divides extensively all the great blood vessels. Hence, limbs, perhaps long diseased, disorganized, cold, gangrenous, without circulation, without contractility and without blood, would afford no decisive evidence to the medical jurist.

In order to do justice to Dr. Taylor, his experiments will be given *in extenso*:

"*Wounds on the dead body*: In the first experiment, an incised wound about three inches in length, was made in the upper part of the calf of the leg *two minutes* after its separation from the body, by which the gastrocnemii muscles, and fascia covering the deep-seated layer of the leg, were divided. At the moment the wound was made, the skin retracted considerably, causing a protrusion of the adipose substance beneath: the quantity of blood which escaped was small, the cellular membrane, by its sudden protrusion forwards, seeming mechanically to prevent its exit. The wound was examined after the lapse of twenty-four hours; the edges were red, bloody and everted; the skin was not in the least degree swollen, but merely somewhat flaccid. On separating

the edges, a small quantity of fluid blood escaped, but no coagula were seen adhering to the muscles. At the bottom of the wound, however, and in close contact with the fascia, was a small quantity of coagulated blood ; but the coagula were so loose as readily to break down under the finger.

“ In the second experiment, *ten minutes* after the separation of the member from the body, an incision of similar extent was made on the outer side of the leg, penetrating through the peronei into the flexor longus pollicis of the deep-seated layer of the muscles. In this case the skin appeared to have already lost its elasticity, for the edges of the wound became but slightly everted, and scarcely any blood escaped from it. On examining the leg twenty-four hours afterwards, the edges of the incision were pale, and perfectly collapsed, presenting none of the characters of a wound inflicted during life. Still, at the bottom of the wound, and inclosed by the divided muscular fibres, there were some coagula of blood ; but these were certainly fewer than in the former experiment. A portion of liquid blood had evidently escaped, owing to the leg having been moved.

“ Other experiments were performed at a still later period, after the removal of the limbs ; and it was found that in proportion to the length of time suffered to elapse before the production of the wound, so were the appearances less distinctly marked ; that is to say, the less likely were they to be confounded with similar injuries inflicted upon the *living* body. When the incised wound was not made until *two or three hours* after the removal of the limb, although a small quantity of liquid was effused, no coagula were found.”—185.

The fluidity or coagulation of the blood examined so late as twenty-four hours after death, with a view to determine whether the effusion took place from a living or dead body, is altogether equivocal, particularly in hot weather. During this period, the blood which had been coagulated may have undergone liquefaction ; firm coagula that had been “adherent to the muscles” may have become “loose, readily breaking down under the finger”—the *rigor mortis* may have disappeared, and the muscles may have become soft, dark, non-contractile and inelastic. Wounds, in many cases, after such a delay, in certain kinds of weather, (Dr. Taylor does not allude to season or temperature,) would be “but slightly everted, and have scarcely any blood”—would be “collapsed,” and have but “a small quantity of liquid blood, and no coagula.”

In a post-mortem wound, says Dr. Taylor, “there is no sanguineous infiltration of the cellular tissue.” This *dictum* should read thus: With rare exceptions, there is sanguineous infiltrations in the cellular tissue of all dead bodies, the victims of accidents or acute diseases. This infil-



tration sometimes begins before death, in the lungs and upon the surface; generally it is very evident soon after death, and always at later periods in dependent parts. In opening the cavities, particularly the abdominal cavity, if a dependent part of the peritoneum be wounded, together with a considerable blood vessel, the subserous tissue will often in a few minutes become densely infiltrated with blood, which will at length coagulate, and finally liquefy.

The force of the post-mortem capillary circulation is sometimes so great, that the venous system is enormously distended; the puncture of the coronary veins of the heart, or the external jugulars, will project the blood in an arching stream as in the living body, a few minutes or even hours, after death. Post-mortem blood, so far from being uncoagulable, will, sometimes, after the removal of all the viscera of the abdomen and chest, including the diaphragm, become solidified on each side of the spine, forming two elongated bodies, which may be lifted from their beds and hung, like snakes, upon the feet of the cadaver without breaking.

Dead bodies, so far from being always non-resilient and inelastic in their physical characters, possess in many cases, for hours, active physiological contractility, particularly in the muscular system. If Dr. Taylor will expose the pectoral muscle, soon, or hours after death, he may with the handle or back of his scalpel, or steel pen, write his name on it a hundred times, by scratching this tissue rapidly; the muscular fibres will rise in delicate ridges or waves in the tract irritated, and will then quickly subside and disappear. A slight blow over the biceps of an extended arm will cause the subject to lift his arm up, and flex it, and place his hand on the trunk or face repeatedly; and this, too, in many cases, with a three or four pound weight tied in the palm, provided the muscles be not much *bruised*. And here it may be added, writers on jurisprudence are quite mistaken in supposing that bruises in the dead body are always distinguishable from those made in the living. Severe contusion of the muscles in the recently dead, as well as in the living body, may kill the contractility.—EDITOR.

REV.—II. *Hand-Book of Inorganic Chemistry; for the use of Students*: By WILLIAM GREGORY, M. D., F. R. S. E., professor of Chemistry in the University of Edinburgh, and author of *Hand Book of Organic Chemistry*. Fourth American from the third English edition: to which is added the *Physics of Chemistry*, by J. Milton Sanders, M. D., LL. D.; professor of Chemistry in the Eclectic Medical Institute of Cincinnati; member of the American Association for the advancement of Science, &c. Pp. 426. 8vo. New York: A. S. Barnes & Co., 1857.

*Hand-Book of Organic Chemistry*: By the same author, annotator, and publishers. Fourth American from the fourth London edition. Pp. 480. 8vo. New York: 1857.

THE manuals of Chemistry which have been prepared for the use of the medical student, exhibiting the existing facts of the science are sufficiently numerous to leave little further to be desired in this department. The hand-books of Professor Gregory bear a favorable comparison amongst these; and appear to be every way adapted to the purpose they profess to serve. In view of the edition before us, however, we deeply commiserate the Edinburgh professor, as is the bounden duty of every good samaritan, on account of the company into which he, as an author, has "fallen" in his journeyings "from Jericho to Jerusalem." We regard it as painful enough, in all conscience, to witness the debilitated efforts of acknowledged and worthy members of the profession, to improve foreign books, the contents of which render them well able to stand on their own merits, and to fulfill their own mission, unaided by annotators and *quasi* authors. It is true the party whose works are thus appropriated, does not thereby sustain damage to his reputation as an author. The trespasser shoulders the consequences, and the result generally is what the lawyers call a *damnum suum*. But a "bill of exceptions" lies here to the application of this rule in the case of the parties to the volumes before us.

A most melancholy and injurious trespass has been made on the rights of the Edinburgh professor, from the fact that the perpetrator is none other than an M. D., LL. D., and professor connected with an *institution devoted to empiricism*, into the fellowship of which the author has been thrust, at the imminent risk of being judged on the maxim of *nos citur à sociis*.

We hope and believe that our sympathies with the author of the "hand-books" in this his misfortune are worthily bestowed, and that they are not thrown away on one who is capable of consent or agency in relation to the use which has been made of his works by the M. D., LL. D., of the Eclecto-pathic college of Cincinnati. With all this comfortable assurance we cannot, nevertheless, render ourselves oblivious of

the fact, that Edinburgh professors, in some rare instances, are not incapable of strange doctrinal idiosyncrasies. Let Henderson, Hahnemann, and Homœopathy bear witness to the desecration of a temple of *Æsculapius* in the very capital of Scotland.

In our own country, it must be confessed, emergencies still more lamentable constantly arise. The perpetual succession of quackery has been secured by legislation, and confided to the care and nurture of Boards of Trustees and appropriate "Faculties." Legislative attempts have been even made to establish *homœopathic chairs* in some of our regular schools. Medical Journals have been seen to come forward to battle in the cause, of the ever-varying *'pathys, isms, and ics* of the day.

The Medical Board of Louisiana was virtually dissolved, and the law regulating the practice of medicine was so modified as to be worthless, at the suggestion of a quack who used to spend his winters in New Orleans, fleecing the victims of cancer, &c., under the false pretences of his ability to cure.

We shall, however, presume that all is right with professor Gregory, and that he is a victim to the M. D., LL. D., who has performed an unbidden and gratuitous task.

The Hand-Book of Inorganic Chemistry makes its appearance doubled in size, but the expansion is œdematous, watery, unhealthy, and in its present masquerade the Edinburghian will scarcely be able to recognize his child. The leading feature imparted to the work by the stolen matter embodied in it by the M. D., LL. D., and professor of Eclecticism, is to render it a fit manual for the strolling daguerreotypist and electro-pathic mountebank. Heat, light, and electricity are pressed into the service of quackery, without due decorum towards the imponderables, and never before perhaps were they so dealt with in any manual of chemistry. Of the 180 pages of added matter 56 are taken up with *electro-pathy* and *photography*! The editor *eclecticises* 74 pages in the form of a supplement, into the work on "Organic Chemistry," which he does not hesitate to pirate from sources to which he and his sect apply the empirical appellation of *allopathic*—a cognomen repudiated and disavowed by all votaries of true medical science equally with the *eclecto-pathic* quackery taught in the school of the M. D., LL. D., who has *eclecticised* to perdition the "Hand-Books" of Dr. Gregory.

We deem it altogether out of place, in us, to review, or notice anything belonging to Eclecticisms. Its schools, journals, books, societies, and associations are, equally with other quackeries, quite without the boundaries of our jurisdiction. We hold to the catholicity of medicine; that there is but one true school, which in view of the historical, the actual and the progressive, is widely distinguished from all empirical sys-



tems ; and that that school can hold no fellowship with any other, without dishonor and degradation. Any notice therefore of Eclecto-pathic books would under ordinary circumstances be disallowed in the pages of a journal devoted, as is ours, to the cause of legitimate medicine.

But in relation to the remarks we have here made, our justification will naturally grow out of the occasion. There are but few admissible exceptions to that judicious rule which recommends that "quackery should be let alone" by the profession. One of these exceptions here presents itself. The charlatan should not be "let alone" when he seeks to intrude himself into association and fellowship, either as author or practitioner, with the true physician. We commend these volumes as here *electicized* to the avoidance of medical students. Let their destiny be fulfilled in such mushroom schools of quackery as have sprung up in the city of Cincinnati.

It is not incumbent on us to know of a certainty whether the *edectic* annotator of these volumes is, or is not, as he puts forth, professor of chemistry in the "Eclectic Institute of Cincinnati." We happen to know from certain pamphlets which have been sent to this journal, that there has been an *edectic* war to the knife in Cincinnati, and that two contending factions "swore terribly," exhausting the vocabulary of billingsgate, each claiming to be far more *edectic* than the other. The result was the establishment of a second school yepeled "the American Medical College." In neither of the announcements does the name of the M. D., LL. D., who has edited these volumes, make its appearance.

The French have a pleasant way of disposing of a story when, at one and the same time, it happens to be good and of doubtful authenticity by saying *s'il n'est pas vrai, il m  rite de l'  tre*, and following this maxim we would say, that if the Editor of these volumes is not a professor in an eclectic institute, he ought to be, as will appear from an extract or two from his works which we here produce :

"A person who had been taking a considerable quantity of blue-pill, for a syphilitic taint, was taken for the experiment. His feet were placed in a foot-bath which contained some water acidulated with hydrochloric acid. The feet were made to rest upon a plate of copper, polished carefully. The negative pole of the battery was attached to this copper-plate, while the patient held the positive pole in his hand. In half an hour the copper plate was coated with what appeared to be a white powder. So thickly was this coat thrown upon the copper, that the impression of the foot, and especially the toes was left strongly imprinted on the plate. Upon examining the plate with a magnifying glass, this white substance was found to consist of innumerable globules of Mercury.

"These experiments were published soon after in the Cincinnati Daily Commercial newspaper, and in the September number of Hines'

Herald of Truth for 1847. Since that time, the subject of the withdrawal of mercury from the system has become agitated, and instances are plenty in which it has been withdrawn from the system. The Electrolysis of mercury from the system, will prove, in a striking manner, the benefit which voltaic electricity is conferring on suffering humanity."

It is well known to the profession, that the results of experiments have gone the rounds of the journals, in which it has been pretended that the reduction of the mercurial preparations and their elimination from the organism in the metallic state through the cutaneous surface into acidulated baths, has been repeatedly effected through the agency of galvanism. This *canard galvanique* not only excited serious attention in this country, but like the celebrated moon-hoax, became a subject of discussion with MM. the Academicians of Paris. The "original experiments" is claimed for New York, of the date of April 16, 1852, and the subject was brought before the Academy of Sciences of Paris, January 29, 1855, by MM. Virgnès and Poey. (See New Orleans Med. and Surg. Journal, Sept., 1855.) The alchemists often found a button of gold in the bottom of the crucible after roasting the baser metals, and doubtless the experimenters may have found globules of mercury after galvanising their internally mercurialized subjects, but the proof of transmutation on the one hand, and extraction and reduction on the other, is defective.

Let the "Daily Commercial" and the "Herald of Truth" however bear witness that this "discovery," which has given so strong an impulse and assurance to electro-pathic quackery, dates as early as 1847, and is due, as might have been anticipated, to a champion of Eclecticism. "Allopathy" has no shadow of claim to priority here, and cannot enter into competition with the real "discoverer."

The following extract taken from page 189, *et seq.*, shows with what wonderful facility cancer may be cured by means of voltaic electricity. The words [by us] italicized, show how very *definite* and *authentic* the annotator is in his therapeutic statistics. Who can possibly doubt the following electropathic demonstration?

"The application of a piece of metal to an open cancer, which is in connection with a voltaic battery, will produce, after a certain time, a coagulated crust over the surface, and when this slough has separated, there will be a *healthy sore*. The fetid smell, the constant and severe pain, and the hardness will be greatly relieved. By this means scirrhous masses may be removed without loss of blood, owing to the coagulating power of the positive pole—and indeed, it will be found a most efficacious remedy in hæmorrhage. An Electrolytic Institute has been formed at Moscow, under the direction of several medical gentlemen, who

report to have cured sixteen cases of cancer, and to have removed the whole female breast, without the use of the knife, or the tying of the artery."

M. MORTON DOWLER, M. D.

REV. III.—*A Practical Treatise on the Diseases of the Testis, and of the Spermatic Cord and Scrotum; with numerous wood engravings.* By T. B. CURLING, F. R. S., Surgeon to the London Hospital, Lecturer on Surgery at the London Hospital Medical College, President of the Hunterian Society, London, etc., Second American, from the 2nd revised and enlarged English edition. Pp. 419. 8vo. Philadelphia: Blanchard & Lea, 1856.

THIS work which has advanced into its second decennium and edition, merits still more than the first edition, the approval and commendations generally accorded to it by the medical profession. It is a very elaborate monograph and a valuable book of reference and guide in the pathology and treatment of affections of the testis, spermatic cord and scrotum.

Mr. Curling says in his preface,—“More than twelve years have elapsed since the publication of the first edition of this work. During that period, I have continued my inquiries into the morbid changes which occur in the testicle, and have availed myself of increased opportunities of studying its diseases. In this edition some new chapters have been added; many have been re-written or altered; and, it is hoped, that nearly all of them contain additional facts of practical interest and importance.”

The engravings which are more useful than elegant amount to sixty figures.

The anatomical introduction consisting of twenty pages, which had been inserted in the first edition, and which Mr. Curling had omitted in this, in order to make room for numerous additions, has been retained in the present American edition.

This work, long under the revision of the laborious and able author, having been enriched by his latest observations, experience, researches and reflections, has a strong claim to a place in every practitioner's library.

As a book of reference, its utility is impaired in consequence of negligence in preparing an index. The reader is, perhaps, obliged to search through the entire table of contents, fifteen pages, in order to find some medical or surgical affection concerning which the author's opinions and teachings may be desired on the part of the busy practitioner. The anatomy is in one place, the pathology in a second, the medical



or surgical treatment in a third, all of which might be readily found by means of an alphabetical index.

Mr. Curling, on the "arrest of development of the testicle," reports the following case :—"A young man died in the London Hospital of disease of the heart. He was 17 years and 9 months old. The body measured 5 feet 5 inches in height, and was plump and well formed.—There was no appearance of beard, or whiskers, or of hair on the pubes. The penis and testicles were very small, not larger than they are usually found in boys of three or four years of age. The testicles were about equal in size, and one of them weighed only two scruples and one grain. Both organs were normal in structure, appearing like the glands in early life, when the tubular structure is very indistinctly developed." 89.

The editor of this Journal subjoins a similar case : (vol. X. ; *Post-mort. Exam.*, LXX.) Nov. 9, 1841, J. C. born in Germany, aged 18, cabman, died of yellow fever last night ; cold and rigid ; countenance tranquil and feminine ; of medium size, symmetrical ; muscles well developed ; fatty tissue considerable, hiding the inequalities usually produced by the muscular system ; the body round and expanded at the hips like a woman ; no hair upon the body excepting the scalp, and eye-lashes and eye-brows ; not a particle of hair on the pubes ; *mons veneris* totally devoid of hair, was developed as in fat children ; the penis smaller than the little finger, resembling that of a boy of 6 or 7 years ; the glands, covered with the prepuce, was the size of a hazel-nut ; the testicles and scrotum were correspondingly diminutive ; no beard ; the axillæ hairless.

Mr. Curling in his account of the "wasting of the testicle," endeavors to fix a standard for its weight in the normal state : He says, "according to Meckel, the testicle, including the epididymis, is only four drachms, and according to Sir A. Cooper about an ounce. The former is certainly too low, and the latter too high. I have found the mean of these two estimates, viz., six drachms, to be the ordinary weight of the sound testicle of a healthy adult." 91.

"It is a common belief," says Mr. C., "that wasting of the testicle is liable to be induced by the long-continued use of iodine. I have not met with an instance of it."

Mr. C., mentions one case observed by himself, two by Baron Larrey, and one by Lallemand, in which injuries of the head were followed by wasting of the testicle. Mr. C., believes that "there is an essential dependence of these glands upon the cerebral organs."

This, though one of the most plausible and reliable doctrines of phrenologists, is not fully established by experience. Mr. Curling in quoting

the two cases from Larrey's Military Memoirs, ignores the multitudinous cases of wasting of the testicles which that distinguished surgeon reports in the very same work from which the cases aforesaid are quoted. Larrey in his campaigns of Egypt, says, "Many soldiers of the army of Egypt, at their return from the campaigns of 1799, complained that their testes had almost entirely disappeared, without any venereal disease. Many soldiers, in consequence of these infirmities, were considered as unlimited invalids. Since my return to France, I have seen and prescribed for this disease in many of the soldiers of the imperial guard. When the atrophy is complete, art offers no relief." Larrey, in this account does not mention cerebral injury or disease as one of the causes of this malady, which he ascribes to climate, brandy, dates, capsicum, gastric disease, and the hardships of war—a very unsatisfactory explanation, truly. *Mem. Mil. Surg.* 1. 260-1-2.

Dr. W. H. Gobrecht whose name does not appear in the title page of Mr. Curling's work, edited this edition. His additions enclosed in brackets, consist of three very short but appropriate notes, together with several illustrative engravings,—among the latter (fig. 54) is one of *elephantiasis scroti* for which Professor Pictou, of New Orleans, performed a successful operation, having removed a tumor which weighed 53 pounds.—EDITOR.

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REV. IV.—*Transactions of the American Medical Association*, vol. ix., pp. 907, 8vo. Printed for the Association.

EVERY true votary of medical science must highly applaud the motives that gave birth to the "American Medical Association." The honor, dignity and usefulness of the medical profession, in our country, are the prominent considerations. Its perpetuity and progressive importance should be the ardent desire of the united profession, and there are in its midst able and earnest minds endeavoring to elevate our country to its destined position amongst the nations who have contributed to build up the medical sciences. The example and influence of the Association cannot fail to produce the most salutary and beneficent effects.

It cannot be denied, however, that after a probation of nine years, the greater portion of its fundamental purposes have proven signal failures, and have been found to be replete with all the elements of impracticability. We may allude, for instance, to the reforms proposed in view of the alleged evils resulting from the multiplication of medical schools, the self-appointment of professors, the graduation of illiterate and ignorant students, the absence or repeal of laws regulating the practice of

medicine, and the general progress of quackery and empiricism. With the best of motives, too much has been attempted by the Association on such grounds as these. We should ever bear in mind, that as a nation our condition has its strong peculiarities. We live under a form of government, the operation of which, in its political, social and scientific relations, exhibits wide differences from that of any other nation. The principle of adaptation forces itself on the profession of medicine, as on all other professions and vocations in life. It is a principle which originated American medicine, legitimate and progressive, and that will ever secure its ascendancy ; but by immunity, as an unavoidable result, have quackery and empiricism attained a state of absolute freedom. This freedom exists by the deliberate will and perfect tolerance of the ruling power, the sovereign people, and no reform association can, in the remotest degree, affect it. It grows out of the nature of our political institutions, and though no one can pronounce from the past on the *possible* revolutions in public opinion that may characterize the future, we have not the least reason to conclude that in our national progress there is to occur any thing which will bring about a different result. Our ancestors, in shaping the colonial and subsequent national institutions, very wisely followed the lights afforded them by the laws and institutions of the mother country and other nations of Europe. The framers left their work to the test of experience, which alone can determine what is to endure and what is to pass away—what is adapted to the wants of a new born nation and what is incapable of permanent adaptation. Conservatism has characterized the governing power in this country. Free religious toleration was long neither understood nor practised, and the divorce of church and state under the constitution, was a novel experiment which was only the result of an absolute necessity. Slow, indeed, was orthodoxy, even in this country, to arrive at the conclusion that the infidel, the religious fanatic and the new-born sectaries, ought not to be pursued with fire and sword. Religious toleration could only have arisen here from necessity, as its absence is a *sine qua non* under the institutions of other nations. Had it not been absolutely necessary, it would never have been realized.

That the people were highly conservative, and were long and sincerely in favor of a union of medicine and state, is fully proven by the laws, both colonial and national, which have been passed from time to time for the regulation of the practice of medicine. The conclusion was, *à priori*, that what is adapted to the English, French and other nationalities, must also be adapted to this country. Nothing short of an absolute historical experience to the contrary could ever have brought such a people as ours to the conclusion to which they have now practically ar-



rived, that the right to practice medicine is subject alone to the jurisdiction of private and individual judgment and prejudice. This experience has been realized, and now, though the great mass of the people do and ever will adhere to scientific medicine, there is nothing in the Blue Laws of Connecticut more practically obsolete than the idea that the right to practise medicine can be, in this country, limited by law.

That a contrary state of things should ever grow out of the future intellectual advancement of our country, is one of the most improbable of events, as is exemplified by the fact, that while protective medical laws, in some sort operative at an early period of our history, have either been repealed or have become null and void for want of use, our educational affairs and all the arts of civilized life have progressed with unparalleled rapidity. This improbability finds further confirmation from the fact that the States of the Union which have become specially distinguished for progress, so far from favoring the enactment of these laws, have even granted charters to Eclectic and Steam Colleges, investing them, as in institutions devoted to real medicine, with the power of conferring the degree of Doctor. It appears obvious, therefore, that the right of physicking is virtually as free as the right of preaching, etc.

But what has occurred in relation to the two latter rights is merely an exemplification of an all-pervading result of our institutions, which has extended its influence into all the vocations in life. The legal profession has as rapidly yielded to the outside pressure as any other. In Great Britain, to whom we owe so much in relation to law and lawyers, the expense and attainments necessary in order to inaugurate any one into the ranks of the profession, render the bar quite beyond the reach of moderate resources, and the dignity of a judgeship altogether sublime. The profession in this country was invested, as far as practicable, with ample British dignity, and a halo of absolute majesty surrounded the head of the judge. The mass of the people were awe-stricken before a gigantic body, hedged in by exclusory laws, and wielding a power in the state which put all other professions into the shade.

The people exhibited a long and truly loyal conservatism in the premises. Behold the judge seated for life! Well worth while was it for counsel to say "may it please your Honor," and to win the salutation of "learned gentleman." The people chose their executives and legislatures, but never dreamed of so far carrying the popular control into the very citadel of the lawyers, as to deem it fitting to *elect* a judge. An elective judiciary! Well, it is now the dominant idea, is extensively prevalent, and must rapidly banish all opposition, and render the practice of law as unlimited as the practice of politics.

The State of Louisiana, more conservative than many of her sister States, has seen her judges pass from the dignity of a life executive appointment to a transient election by the people. The successful aspirant for judicial honors must now be as obsequious a politician as any other candidate who may canvass for votes ; for all governments are alike in this, that the ruling power teaches the absolute necessity of a courtly humility. The judge being thus the direct creation of the people, is no longer by them venerated beyond other place-men, and the ancient profound deference so universally manifested towards "his Honor," is often supplanted by down-right irreverence, and a hope "for general relief" in the "coming election."

The once conservative State of Louisiana—tell it not in Gath, nor publish it in the streets of Cincinnati—has inaugurated a general incorporation law, transferring its highest power—that of founding scientific, literary and other corporations—conferring upon every six or more individuals thereunto assenting and accepting before any notary public, the fullest authority known to modern legislation in this behalf. This fundamental law, if carried into effect throughout the Republic, would not only create more than two millions of incorporated colleges, including other associations using seals, suing and being sued, but would deprive the South of its due share of corporate privileges in this nation, because four millions, the *servi*, must be deducted from the slave-holding states. The State of Louisiana might obviate this inequilibrium in the scales of justice, by making each citizen a king, sultan, shah, dey, or institution, his personal corporation being sacred and irresponsible. Steam-botanic, eclectic, physio, homœopathic, hydropathic, and regular systems now require not less than *six* persons to one incorporated monopoly.

We have said that whether it be good or bad, right or wrong, all laws tending to limit the right to practice medicine, (including, of course, surgery and midwifery,) carry with them the seeds of nullity. But this characteristic is not confined to *directly* limitative laws, but extends itself notably to those laws which are limitative *indirectly* and by *implication*, as to those legislative acts by which medical colleges are chartered. Though we are wholly conservative, and are perfectly satisfied to leave the medical schools to the test of time, we think it not improbable that the time may arrive when legitimate medicine may, out of self-respect and consideration for the honor and dignity of the profession, abandon legislative charters, and set up for itself, "and be a law unto itself." Whatever advantages real medicine has derived from the existence of such things as legislative charters, it has incurred evils which are but too apparent. These laws have induced the realization of the wildest dreams of the Boanerges of empiricism and quackery, who have demanded and

obtained, on the platform of "equal rights," the chartered right to confer the degree of Doctor of Medicine, as is seen in the legal institutions of Cincinnati and Memphis. Thus is inaugurated the era of free charters, giving aid and comfort to free graduation and free practice.

The license to practise law is horizontally cheap, and has become a mere matter of form. Indeed, it is not necessary to be a lawyer at all to be eligible to the Supreme Bench of Louisiana, for the State Constitution is completely silent on the subject, not even saying that the incumbent "shall be learned in the law."

It is from what we have said, therefore, perfectly obvious to our mind, that the idea of limiting by law the right to practise any profession, trade or calling, is under our institutions becoming, and must permanently become entirely obsolete. The medical, legal, clerical, and other professions, owing to revolutionary causes, as in France, have within short periods occupied the most variable relation to the ruling power. But we are here strangers to revolution, and there is no effective reactionary tendency on the point on which we are speaking, but the movement, though gradual, is onward.

American medicine is, therefore, what American institutions have made it—no more, no less. It is very easy to talk and write about "reforms," and it will readily be admitted that notable reforms are much to be desired in our medical institutions. But the latter by no means afford a special and isolated case, as there is no greater necessity for reform in medicine than there is in law, religion, politics, honesty, etc. The medical profession in the United States, even as it is, is a shining example among the other vocations in life.

With all due humility, we would suggest that the denunciations which have been sent forth by the American Medical Association against the profession as it exists in our country, embody much that is unjust and impolitic. These denunciations have been annually repeated, and the enemies of regular medicine find them available weapons in their warfare, giving the authority of the profession against itself. And these remarks are the more specially applicable, as the Association has not the least power, either legislative or advisory, that can lead to any of the reforms enumerated at the outset of this article, and for the very reasons which we have already indicated.

All protective medical laws being either repealed or remaining a dead letter, and being wholly incapable of adaptation, and tending equally to the protection of quackery, and hence inexpedient, it appears conclusive to our mind, in relation to the future—1, that medical schools must continue rapidly to multiply, and that facilities for graduation must be increased; 2, that medical gentlemen will continue to meet together and



organize medical schools, and will continue to appoint themselves professors, and that such mutual covenants may arise in the bosom of the American Medical Association itself; 3, that the standard of qualification will not be elevated; that the college degree will become, as it virtually now is, a mere matter of form—a kind of evidence of study and expense, and that the holders will continue to present every grade of qualification, from notable ignorance and incompetency up to the highest order of qualifications.

And what are the obstacles which must thus perpetuate this condition of things? They consist in the nature of our medical schools, which have been stamped by the causes to which we have alluded, and which are beyond the control of the profession, or any association which it has the power to originate.

Let us imagine the American Medical Association placed under the most favorable auspices imaginable in view of reform. Let us suppose that there are in the body of the Association itself no obstacles to the proposed reformation; that it contained no professors deriving personal profit and reputation from the existing state of the medical schools and medical education, or, if it did contain such professors, they were prepared to resign and throw open their chairs to a general *concours*; or, suppose they had obtained their professorships in this manner, and suppose they had unanimously resolved that so far from selling their college tickets to every illiterate ninny who might require them, as is now the usage, they should agree to admit no student into their colleges who had not received a good preparatory education,—let us suppose all this and then the real difficulties only begin to show themselves. Medical schools can only exist in this country on commercial and financial principles. In this respect they are all individual firms, and they are as truly in the market for numerical patronage as the dealer in dry goods.

The distinctive importance of every medical school in our country is derived not chiefly from the *qualifications* but from the *number* of its students. It is this which secures the ablest professors, and gives reputation and influence to these institutions. The standard of qualification which is so fixed as to secure their sole vital principle of patronage is in nearly all of them the same, and consequently accommodates itself to the lowest pretender to collegiate honors. To raise the standard of qualification would be an irrational and useless act of suicide in the schools, attended with neither indemnity nor appreciation on the part of the people. *They* are the ruling and controlling power. *They* have proclaimed the freedom of physie. *They* accept the tenth-rate graduate, and often bestow on him fortune and patronage. To exclude such an one from the ranks of the profession by the refusal of “ample academic

honors," would be even resented by public opinion. The exclusion would redound directly to the benefit of quackery, which knows no restraint, and to the injury of the student of legitimate medicine, who in such case should have the preference, however pitiable his attainments may be. Free graduation has of a necessity grown out of free physic, and if it be an evil, neither the responsibility nor the remedy is with the medical profession or the American Medical Association.

The organization of new medical schools must rapidly continue from three uncontrollable causes: 1stly, from anticipation of increased practice and reputation, and consequently income from the title of "professor;" 2ndly, anticipation of income from lecturing; and, 3rdly, the sovereign people not only do not discourage such organizations, but greet them with hearty good-will. The obvious result is a new necessity for numerical patronage, which is not only adverse to the elevation of the standard of qualification, but must rather tend to depress it, or to retain it *in statu quo*. Here, then, are influences originating in public opinion and private interest against which all protest is useless, and which must organize medical schools in every direction, and overrule all that has been put forth about elevating the standard of medical education.

M. MORTON DOWLER, M. D.

[To be continued.]

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NOTE UPON THE HAND-BOOKS OF CHEMISTRY.—(SEE REV. II.)—Since the Review of the above works was printed, the American Journal of Pharmacy, for January, 1857, has come to hand. This able journal, in a critical notice of Dr. Gregory, as edited by Dr. Sanders, enters a protest against the work on organic chemistry as being a re-print from the old stereotype plates of the first edition, and as being thus deprived of much of its value to the American student, merely to subserve the interest of the publisher in using the stereotype plates of the old edition, now nine years old, although the leading scientific additions are found in an irregular, disconnected and imperfect supplement, often contradicting the text. The writer deploras the incompetency of the American editor, and takes exception to his omissions and defects as a compiler.

The New Orleans Reviewer had not seen the former editions of Dr. Gregory's work, and consequently has not been able to do justice to an Eclectic M. D., LL. D.

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## Editor's Office.—Notices.

JANUARY, 1857.

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### BOOKS AND PAMPHLETS RECEIVED.

Communication received from J. A. Barry, M. D.

*On the Diseases of Infants and Children:* By Fleetwood Churchill, M. D., M. R. J. A., Hon. Fellow of the College of Physicians, Ireland; Hon. Member of the Philadelphia Medical Society, etc., etc., 2nd American edition, enlarged and revised by the Author; edited with additions, by Wm. V. Keating, M. D., A. M., Physician to St. Joseph's Hospital, lecturer upon Obstetrics and diseases of women in the Phila. Med. Association; Physician to St. Joseph's Asylum for Orphan's; Fellow of the College of Physicians; Member of the American Philosophical Society, etc., etc., etc. Pp. 735. 8vo. Philadelphia: Blanchard & Lea. 1856. From Mr. J. C. Morgan, bookseller, Exchange Place, N. Orleans.

- Obstetrics, the Science and the Art*: By Charles D. Meigs, M. D., Professor of Midwifery and the Diseases of Women and Children in the Jefferson Medical College of Philadelphia; lately one of the Physicians of the Lying-in Dispensary of the Pennsylvania Hospital; Member of the Society of Swedish Physicians at Stockholm; corresponding member of the Hunterian Society of London; Member of the American Philosophical Society; of the Academy of Natural Sciences of Philadelphia; of the American Medical Association, etc., etc., third edition, revised; with 129 illustrations. Pp. 758. 8vo. Philadelphia: Blanchard & Lea. 1856. From Mr. Thos. L. White, bookseller, 105 Canal street, New Orleans.
- An Introduction to Practical Chemistry, including Analysis*: By John E. Bowman, F. C. S., Professor of Practical Chemistry in King's College, London; author of "a Hand-book of Medical Chemistry," etc. second American from the second and revised London edition. Pp. 298. Large 12mo. Philadelphia: Blanchard & Lea. 1856. From Mr. J. C. Morgan, bookseller, Exchange Place, N. O.
- The Practical Anatomist; or the Student's Guide in the Dissecting Room*: By J. M. Allen, M. D., late Professor of Anatomy in the Medical Department of the Pennsylvania College, Fellow of the College of Physicians; Member of the Academy of Natural Sciences, etc., with 266 illustrations. Pp. 631; large 12mo. Philadelphia: Blanchard & Lea. 1856. From Mr. Thos. L. White, bookseller, 105 Canal street, N. O.
- Physical Exploration and Diagnosis of Diseases affecting the Respiratory Organs*: By Austin Flint, M. D., Professor of the Theory and Practice of Medicine in the University of Louisville; Honorary Member of the Medical Society of Virginia, and of the Kentucky State Medical Society. Pp. 636. 8vo. Philadelphia: Blanchard & Lea. 1856. From Mr. Thos. L. White, bookseller, 105 Canal street, N. O.
- Tenth Annual Report of the Board of Regents of the Smithsonian Institution*. Pp. 438. 8vo. Washington: 1856. From the Hon. John Slidell, U. S. Senate.
- A Treatise on the Practice of Surgery*: By Henry H. Smith, M. D., Professor of the Principles and Practice of Surgery in the University of Pennsylvania; consulting surgeon to the St. Joseph's Hospital, Philadelphia; author of a Treatise on Operative Surgery, etc., etc., illustrated by 274 engravings on wood. Pp. 828. 8vo. Philadelphia: J. B. Lippincott & Co. 1856. From Mr. H. D. McGinnis, bookseller, 36 Camp street, N. O.
- Climatology of the United States*: By Prof. L. Blodget, member of the Smithsonian Institution, &c., specimen sheet of an octavo of 450 pages, with charts, publishing by J. B. Lippincott & Co., Phila.
- Hand-book of Organic Chemistry, for the use of Students*: By William Gregory, M. D. F. R. S. E., Professor of Chemistry in the University of Edinburgh, and author of Hand-book of Inorganic Chemistry. Fourth American from the Fourth London Edition; edited by J. Milton Sanders, M. D., LL. D., Professor of Chemistry in the Eclectic Medical Institute of Cincinnati; Member of the American Association for the advancement of Science, etc. Pp. 480. 8vo. N. York: A. S. Barnes & Co. 1857. From Mr. Wm. Flemming, bookseller, N. O.
- Medical Notes and Reflections*: By Sir Henry Holland, Bart., M. D., F. R. S., etc., etc., Fellow of the Royal College of Physicians, Physician in ordinary to the Queen, and Physician in ordinary to His Royal Highness, Prince Albert. Pp. 493. 8vo. From the third London edition. Philadelphia: Blanchard & Lea. 1857. From Mr. H. D. McGinnis, bookseller, 36 Camp street, N. O.
- The Transactions of the American Medical Association*: Vol. IX. Pp. 907. Philadelphia. 1856. From the Committee of Publication.
- A Treatise on Therapeutics and Pharmacology or Materia Medica*: By George B. Wood, M. D., late President of the American Medical Association; President of the College of Physicians of Philadelphia; Professor of the Theory and Practice of Medicine in the University of Pennsylvania; Senior Physician of the Pennsylvania Hospital, one of the authors of the United States Dispensatory; author of a Treatise on the Practice of Medicine, etc., etc. In two vols. 8vo. Pp. I. XVI. 840, II. 901. Philadelphia: J. B. Lippincott & Co; London: Trübner & Co. 1856.



- The Physician's Prescription Book*: By Jonathan Pereira, M. D., F. R. S. Pp. 282. 18mo. Second American from the 12th London edition, Philadelphia: Lindsay & Blakiston. 1857. From the Publishers.
- Hand-book of Inorganic Chemistry for the use of Students*: By Wm. Gregory, M. D., F. R. S. E., Professor of Chemistry in the University of Edinburgh, and author of *Hand-book of Organic Chemistry*. Fourth American from the third English edition; to which is added the *Physics of Chemistry*, by J. Milton Sanders, M. D., LL. D., Professor of Chemistry in the Eclectic Medical Institute of Cincinnati: Member of the American Association for the advancement of Science, etc. Pp. 426. 8vo. New York: A. S. Barnes & Co. 1857. From Mr. Wm. Flemming, bookseller, Magazine street, N. O.
- Proceedings of the American Pharmaceutical Association*: Held in Baltimore, September, 1856. Pp. 91.
- On the Treatment of Iritis without Mercury*: By Henry W. Williams, M. D., one of the Surgeons of the Boston Dispensary. Pp. 24. Boston: 1856.
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## • TABLE OF CONTENTS.

### ORIGINAL COMMUNICATIONS.

	Page.
ART. I.—Cases Illustrating the Practice of Medicine in the Counties of Rusk and Panola : By James E. Smith, M. D., of Pine Hill, Rusk Co., Texas.....	443
ART. II.—Lithotrity : By C. S. Fenner, M. D., of Memphis, Tenn.....	448
ART. III.—Dysentery : its History and Treatment : By W. L. Gammage, M. D., of Rusk, Cherokee Co., Texas.....	451
ART. IV.—The Relations of Chemistry to Practical Medicine : By Isaac L. Crawcour, M. D., Professor of Chemistry and Medical Jurisprudence in the New Orleans School of Medicine.....	459
ART. V.—Case of Aneurism of the Crural Artery. Ligature of the External Iliac : By H. Daret, M. D. P.....	471
ART. VI.—True Aneurism of the Crural Artery. Ligature by Dr. Mercier. Observations of Dr. M. Escoubas.....	472
ART. VII.—Aneurism of the Femoral Artery. Ligature of the External Iliac : By Dr. Mercier. Observations of Dr. Alfred Mercier.....	475
ART. VIII.—Fragmentary Notes on Pathological Anatomy. (Continued from Page 312) : By Bennet Dowler, M. D.....	484

### PROGRESS OF MEDICINE.

ART. I.—Experimental Researches on Animal Temperature : By M. Bernard. Translated from the French. By M. Morton Dowler, M. D....	493
ART. II.—Experimental Physiology. Supra-renal Capsules. Translated and condensed from the French. By M. Morton Dowler, M. D. New Orleans.....	503
ART. III.—Glycosuria Physiologica. Translated from the "L'Union Médicale, for the New Orleans Medical and Surgical Journal. By J. P. Barbot, Apothecary.....	505
ART. IV.—Glycogenia—Production of Saccharine Matter. Translated from the "Gazette Médicale," p. 611. Oct. 4, 1856, for the New Orleans Med. and Surg. Jour.....	508
ART. V.—Influence of the Obliteration of the Vena Porta on the secretion of bile, and on the lyceogenic function of the liver. "L'Union Médicale. Sept. 13, 1856." Translated and condensed from the French : By M. Morton Dowler, M. D.....	511
ART. VI.—Ligature of the Oesophagus. Translated from the French. By M. Morton Dowler, M. D.....	512
ART. VII.—Tableau of the Use of Iodine in Scrofula, and the Symptoms or Maladies which may complicate themselves with that Disease. By M. Martin Lauzer. Translated from the Revue Thérapeutique, for August, 1856. By M. Morton Dowler, M. D.....	514
ART. VIII.—Iodoform. Translated from the French, by M. Morton Dowler, M. D., New Orleans.....	520
ART. IX.—On the Employment of Chloroform in Obstetrical Practice. By Professor Scanzoni. (L'Union Médicale. July, 1856. Beitrage zum geburts, t. ii. 1855. et monatschrift für geburts.) Translated from the French, by M. Morton Dowler, M. D., New Orleans.....	521

ART. X.—1. Chronic Poisoning with Nitras Argenti, with black pigmentation of the skin : By Dr. Schönheit, of Güssing. 2. Effects of Nicotine. 3. Ophthalmia : By Dr. Fröbelius, of St. Petersburg. from the <i>Österreichische Zeitschrift für Practische Heilkunde</i> . (Edited by Drs. Knolz and Preyess, of Vienna.) Translated from the German by Rudolph Turney, Apothecary, New Orleans, for the N. O. Med. and Surg. Jour.....	624
ART. XI.—Convulsions in Children Considered in an <i>Ætiological Point of View</i> . 2. Whooping-Cough. Translated from the French, by M. Morton Dowler, M. D., New Orleans. ( <i>L'Union Médicale</i> , July 22, 1856. <i>Journal für Kinderkrankheiten</i> , 1856, et <i>Annales Médicales de Flandre occid.</i> , Juillet, 1856.....	529
ART. XII.—On Infantile Thrush; ( <i>Muguet des Enfants nouveau-nés; aphthæ</i> ) : By Dr. Lebariller, Physician to the Bordeaux Foundling Hospital. Translated from the " <i>Journal de Médecine de Bordeaux</i> , of November, 1856, for the New Orleans Medical and Surgical Journal : By J. P. Barbot, Apothecary.....	532
ART. XIII.—On the General Use of Chloroform : By Dr. M'Leod, in the Medical and Surgical Society of London. (May, 1856).....	541
ART. XIV.—On the Pathology of Whooping-Cough : By Dr. Graily Hewitt, Lecturer on Comparative Anatomy and Zoölogy at St. Mary's Hospital Medical School.....	546
ART. XV.—Sanitary Results from Improved Dwellings in England.....	548
ART. XVI.—Legal Protection of the Medical Profession.....	553
ART. XVII.—State Medicine in Germany, France, &c.....	555
ART. XVIII.—Oriental Medicine, Ethnology, &c.....	560
ART. XIX.—Medical Education.....	564

# REVIEWS.

REV. I.—Medical Jurisprudence. By Alfred S. Taylor, M D., F. R. S., Hon. M. D. Univ. St. Andrew's. Fellow of the Royal College of Physicians, and Lecturer on Medical Jurisprudence and Chemistry in Guy's Hospital. Fourth American, from the fifth London Edition. Edited with additions, by Edward Hartshorne, M. D., one of the Surgeons to Wills' Hospital, etc. Pp. 697. 8vo. Philadelphia : Blanchard & Lea. 1856.....	566
REV. II.—Hand-Book of Inorganic Chemistry ; for the use of Students. By William Gregory, M. D., F. R. S. E., Professor of Chemistry in the University of Edinburgh, and author of Hand-Book of Organic Chemistry. Fourth American from the third English edition ; to which is added the Physics of Chemistry by J. Milton Sanders, M. D., LL. D., Professor of Chemistry in the Eclectic Medical Institute of Cincinnati ; member of the American Association for the advancement of Science ; &c. Pp. 426. 8vo. New York : A. S. Barnes & Co., 1857.	570
Hand-Book of Inorganic Chemistry : By the same author, annotator, and publishers. Fourth American from the fourth London edition. Pp. 480. 8vo. New York : 1857.....	575
REV. III.—A Practical Treatise on the Diseases of the Testis, and of the Spermatic Cord and Scrotum ; with numerous wood engravings. By T. B. Curling, F. R. S., Surgeon to the London Hospital, Lecturer on Surgery at the London Hospital Medical College, President of the Hunterian Society, London, etc. Second American, from the 2nd revised and enlarged English edition. Pp. 419. 8vo. Philadelphia : Blanchard & Lea, 1856.....	579
REV. IV.—Transactions of the American Medical Association, vol. ix., pp. 907. 8vo. Printed for the Association.....	581



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# THE NEW ORLEANS MEDICAL AND SURGICAL JOURNAL

FOR MARCH, 1857.

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## ORIGINAL COMMUNICATIONS.

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ART. I.—*On the Purulent Ophthalmia of North-Eastern Texas*, by  
J. A. BARRY, M. D., of Clarksville, Texas.

THE universal prevalence of Purulent Ophthalmia in N. E. Texas, entailing upon all classes of society much physical suffering and mental anguish, by its unfortunate terminations in complicated and destructive pathological conditions, empirical medication, caused either by the rudimentary system of ophthalmic education inculcated by our schools, or a disinclination to its study on the part of medical practitioners, of high attainments in other departments of science, has placed the disease in a more serious attitude, meriting more profound apprehension here than in most other countries.

That the affection is endemical, and may be attributed to physical causes independently of the idea of contagion, is eminently substantiated by the universality of its appearance in, and the peculiar topography of, this section of country.

In the region circumscribed by the Red river on its North and East, the Sulphur on its South, its western boundary being lost in the limitless prairies of the far distant West, is to be found the nidus of this very serious affection. The country is unequally divided between timber and prairie. Extending out from the rivers from five to twenty miles, and all along the meanderings of the smaller streams emptying into them, are seen the principal forest lands. These lands, constituting probably one-third of the whole, are very fertile, and being low and marshy, interspersed here and there with lakes and lagoons, are subject to annual inundations, which, together with the consequent decomposi-

tion of the exuberance of vegetation with which they are covered, give rise to the development of an immensity of miasmata. The remaining two-thirds of the country are principally prairies, covered with a rich stratum of dark loam, consisting of sand and alkaline earths, with an admixture of iron oxyds, sulphates of copper, etc. Adjacent to this, and in many places approaching the surface, is a substratum of rotten limestone, which, in consequence of its friable nature, is intimately blended with, thereby adding one-fourth to the whole elementary composition of the soil. The prairies are elevated and exceedingly undulating, and, when in Spring they are clothed with nature's most lavish garniture, the majesty of their physical conformation, and the beauty and sublimity of their scenery, create a landscape unsurpassed by the imaginative representations of the romancer.

The climate, though from its latitude it might not be considered excessively cold or hot, is nevertheless subject to such sudden transitions of temperature, from the nakedness of the prairies, as to render it at times very unpleasant, especially in the Spring and Winter months. The Summer days are sultry, the thermometer ranging from  $85^{\circ}$  to  $100^{\circ}$  at mid-day, followed by chilly nights and exceedingly heavy dews. These causes develop a multiplicity of catarrhal affections generally, the chief peculiarities about them being the characteristic tenacity of their persistent tendency.

I have been thus explicit in the description of the physical condition of the country, which, together with the detrimental influences to the eyes of the reflection of solar rays, constitute the basis upon which the endemical origin of the disease may very reasonably be predicated.

The rarefaction and the density of the atmosphere, by the great heat of Summer, keeps up a continued gust of wind, impregnated with minute particles of dust, and the noxious effluvia from the surrounding valleys. That miasmatic poison alone can produce the affection, I cannot believe, from the fact of its not prevailing in other malarial regions, but that it exerts a powerful influence upon it, probably by superinducing an obnoxious condition of the system, is abundantly proven, not only by its greater prevalence in the Summer and Autumn, but from the fact that many cases not unfrequently assume an intermittent type, and are cured by quinine alone.

But among the causes which have been enumerated, and those which, in my opinion, exert a more direct and potent influence in producing the affection, are the combined influence of a dusty atmosphere, (minute particles of lime being powerfully irritant to the eyes,) the intense glare of the sun's reflection, and the nakedness of the prairie country. Individuals having so wide a prospect before them, such an extended field

for observation, at times limited alone by the horizon, are continually exerting their vision to seek objects at a distance, which alone is calculated either to superinduce the affection, or at least greatly to aggravate its symptoms. For example, a gentleman, formerly a citizen of this place, was entirely cured of the disease by a removal to the mountains of Arkansas. In conversation with him afterwards, he assured me that he had used no medication whatever, but attributed his cure, to use his own phraseology, to the fact that "he could there find something to rest his eyes upon."

From the above considerations in regard to its causes, I am induced to believe that the disease is identical in its nature to Egyptian Ophthalmia, modified probably by differences in the physical condition of the country, and by the manners, customs and constitutional peculiarities of the inhabitants.

From Assalini, who accompanied the French Army into Egypt, as Surgeon to the Viceroy of Italy, and from whom we have a more satisfactory history of the disease than from any other, we learn that the natives themselves, though greatly degenerated from the proud and enviable position which they in former times occupied among the literati of the world, disregard entirely the idea of contagion, and attribute the disease alone to the effects of physical causes.

Neither Assalini nor the French and English Army Surgeons who saw and treated the disease at its very birth-place, supposed it to be contagious. This idea of contagion originated in Europe long after the return of the English and French Armies, among a class of Surgeons whose observations and experience were confined alone to the prevalence of the disease among the troops, who having probably acquired a constitutional predisposition, had imbibed its germ during their sojourn on the arid plains of Egypt.

That it at this time and afterward spread to an alarming extent, particularly in England, is admitted; but its prevalence in different parts of Europe had been observed long prior to the Egyptian expedition. I am constrained to disbelieve the theory of its contagion, not only by observing its uncertain progress in families, but by actual experiment upon dogs and cats, having repeatedly introduced into their eyes the virus of the disease, from which I have never seen the least symptoms of the disease to follow. And, at one time, believing that I had the disease under my control in its incipency, I actually took some matter and introduced it into the inner canthus of my left eye, without experiencing the least inconvenience from it. These experiments, it might be observed, were made with the matter taken from patients who had been suffering from three weeks to four years.



I regard the disease as essentially an inflammation of the whole conjunctiva, having but seldom seen its palpebral surface inflamed, without at the same time observing its ocular portion in a similar condition.

The first symptom experienced is a stiffness of the eye-lids and globes, followed in a short time by a sensation as if sand or some foreign substance was in the eyes. Very soon the whole conjunctiva becomes red and swollen, attended with an increased secretion of tears, which, in consequence of the closure of the *ductus ad nasi*, run down upon the cheeks and excoriate them. The disease always attacks one eye first, and it is a singular and very unaccountable fact, that out of one hundred and fourteen cases which have come under my observation, the right eye has been the first affected in ninety-eight of them, and has been the one to suffer more seriously in about the same ratio. Unless checked in its progress in from five to ten days, the whole conjunctiva becomes of a scarlet color, with great tumefaction of the lids, chemosis, and a purulent discharge. About this time great vascularity of the cornea becomes apparent. Small blebs may be seen upon its outer surface, which, in the course of a few days, will discharge a whitish serum. These spots seem often as the commencement of ulcers.

Among the unfortunate results of the disease may be mentioned ulcerations and opacities of the cornea, prolapsis and adhesion of the iris, staphyloma, etc. There are milder cases of the same affection, where the patient goes for weeks and months with a low grade of inflammation, producing no very serious consequences save a gradual thickening of the lids and sclerotic coat of the conjunctiva, which constitutes a variety of pterygium. There are cases, again, where the work of destruction commences on the palpebræ, their ciliary follicles becoming diseased, the lashes falling out; or the mucous papillæ become enlarged, forming granulations, which by rubbing against the cornea produce more gradually the dreadful consequences above described.

I have noticed this latter variety more particularly in old persons, whose constitutions have been impaired by an intemperate and profligate life. The above is a summary of the principal symptoms of the disease, which, in some instances, however, presents other phases, as diversified as "the myriad forms of human beings."

The eye holds such an intimate sympathetic relation to the other organs of the body—has such a diversity of tissues in its complicated anatomical arrangement, that its successful treatment comprehends not only a knowledge of its physiological actions, but involves an intimate acquaintance with the fundamental principles of the whole science of pathology. While it doffs the charlatanical idea of specialism as unworthy the dignity of consideration, at the same time a system of hypothetical

generalities is found incapable of application to the innumerable variety and complexity of forms which the disease assumes. Constitutional as well as topical medication must be brought to bear, and as illustrative of this method of treatment, I shall instance a few cases from my notes ; the first case being the type which the affection most generally presents.

J. W., a stout, athletic man, 24 years of age, a farmer, came under my observation on the 24th of September, 1855. He stated that he had been suffering eight days ; had done nothing for his disease up to date. His pulse 98 ; tongue slightly coated ; right eye closed from tumefaction of the lids, the cornea, from chemosis, nearly occult ; the left eye diseased, but not so violently. I gave him the following pills :—

R. Ext. Colocynth. comp.

Hydrarg. Chlor. Mit. āā. gr. x. M.

*F. mass.; divid. in pil. No. iv.* Also applied warm hop poultices to the eyes, and ordered blisters behind the ears, for which I prefer ol. Tiglii as being more easily applied, and as producing a more lasting impression.

Sept. 25th. Had been purged—ordered the following :

R. Pulv. Opii.

Rhei. āā. gr. x.

Hydrarg. Chlor. Mit. gr. v. M.

*F. mass.; divid. in pil. No. xv.; Unum omne tertia hora sumenda.* My object in prescribing the mercurial this time was to prevent lymphatic effusions. I also prescribed the following ointment :

R. Nit. Argenti, gr. vi.

Adeps Suillæ, ʒii. M.

*F. ung.;* to be applied with a camel's hair brush upon the everted eyelids daily.

In seven days the patient complained of nothing save the excessive intolerance to light ; for which I ordered tinct. of Iodine to be applied upon the external surface of the lids, which completely relieved him. In ten days the patient left me, sound.

When I first saw this man the inflammation was at its acme ; the exigencies of the case demanded prompt and immediate action. Although I used a heroic remedy, fully stimulating, and an astringent ointment, the results of the case fully justified me in so doing. I am aware that most practitioners recommend milder measures until the activity of the inflammation is somewhat reduced ; but was I to await the tardy action of demulcents, antiphlogistics, and the milder stimuli ? Complete destruction of this man's eye might have been the result of delay. Each application of the silver in this case, though causing an afflux of blood to the parts, thereby increasing the heat and redness, augmenting the

secretions, etc., until from exhaustion they subsided, was followed by a reaction of mitigated symptoms. Now I maintain that active stimuli are the surest and most speedy measures for treating acute inflammation, not only of the eyes, but for the mucous membranes generally.

In proof of this, we know that fever is a salutary process of a vital principle, a fact revealed and realized in the fearful mortality of "*feber sine febres*." Though the application of this theory to idiopathic inflammations would be transcending the usual grounds of pathological research, grasping the very elements of disease itself, a good that never yet has been successfully attained, it cannot be disputed that science in this particular is progressing.

The second case that I shall present, and one which illustrates that peculiar form of the disease in which the palpebræ alone are affected, occurred in the person of the Hon. W. B. Stout, well known in this State. This gentleman, about 48 years of age, naturally of a delicate habit of body, but having been inured to the hardships and vicissitudes of a frontier life, enjoyed excellent health, with the exception of his eyes, from which he had been suffering for nearly four years. He had tried every system of medication, from the nostrum of the ignorant pretender to the methodical formulæ of the man of science, without receiving any benefit.

With the exception of some redness and thickening of the sclerotic conjunctivæ, and great photophobia, the eye-balls were but little diseased. But the lids were enormously thickened, and their cuticular coverings very much elongated. The cilia had fallen off, etc., etc.

I placed him under an alterative course of treatment. I first gave him the bichloride of mercury in the compound syrup of sarsaparilla; and after three weeks I substituted for the mercurial the iodide of potassium. I used in the meantime the solid sulphate of copper upon the everted eye-lids in the morning, and the tinct. of iodine upon the external parts at night. Continuing this course of treatment for about six weeks, the lids became reduced to their proper size; the intolerance to light was relieved, and his vision became as distinct as ever.

I might say here, that I prefer the preparations of copper to any other in the chronic forms of the disease.



ART. II.—*Fragmentary Notes on Pathological Anatomy.* By BENNET DOWLER, M. D. (Continued from the last number.)

IN making researches into pathological anatomy, the possibility of inappreciable lesions, or, what is virtually the same, possibility of finding no lesions at all, must be kept in mind, as well as the most palpable disorganizations. But even negative results are often of great value in removing erroneous or speculative views which have been long accepted upon insufficient evidence, as fundamental truths.

A determination to find something morbid in anatomical research—something which theoretical prepossessions had anticipated—is too often the precursor of errors of fact and fallacies of logic.

The mind is apt to be uneasy in the dark dungeon of negation, and is anxious to escape from it into the fair fields of positive science. The dove, tired of confinement in the ark, went forth, but finding on the boundless expanse of water no resting place for the sole of her foot, returned to her prison-house to await the progress of events. The pathological anatomist finds himself sometimes obliged to do likewise.

Who, in his pathologial researches, can flatter himself that he is wholly free from the prejudices of the day—free from the biases of education—free from pride of opinion—free from errors of judgment—free from the dangers of following his imagination, hopes and wishes beyond the legitimate range of experimental demonstration?

If it be difficult to judge well when every possible source of fallacy has been removed, how much more so is it to arrive at the truth, when the experiments, how carefully so ever made, are in themselves difficult to interpret and appreciate beyond the possibility of fallacy!

Nevertheless, pathological anatomy, guided by physiology, is indeed the hopeful part of medical science. Post-mortem examinations, from Morgagni (the father of modern morbid anatomy) to the present, have advanced pathology more than the speculations and guesses of twenty centuries—more than any other method—more than all other methods—having given to the science of diagnosis a certainty often approximating, if not equaling that of physics itself. Without diagnosis, of what avail is medical theory at the bedside? The pathological anatomist, who combines in himself the ability to observe and to reason, stands upon a solid foundation. Nor should he be discouraged because the anatomical method has not as yet elucidated all diseases in a satisfactory manner. The recent past is but a prelude to the successes which await the future of this department of science, to which micrology, physical diagnosis, physiological and pathological chemistry, and the other kindred sciences, will be, as they have already been, efficient auxiliaries. The declaimers against pathological anatomy, as a sterile and

exhausted science, should remember that their predecessors, a century ago, committed the same error, which they would have been compelled to renounce, had they lived to the present day.

The department of artificial pathological anatomy (if such nomenclature be allowable) is a vast, and, as yet, little explored mine of knowledge. The artificial induction of diseases and structural alterations by means of physical and deleterious agents, whether gaseous, liquid or solid, is doubtlessly possible to a much greater extent than has yet been practised among the various classes of the inferior animals. Comparative physiology not only illustrates but establishes most of the fundamental principles of human physiology. In like manner, upon the principles of analogy, the natural and artificially produced maladies of animals will still further illustrate the morbid anatomy of man. Toxicologists have already made brilliant advances by this method. Man has plenary power—a “dominion over every thing that creepeth upon the earth.” “Behold, it is good!” Let the rural physician, whose opportunities herein are best, avail himself of this source of knowledge.

Anæmia, tuberculosis, cutaneous, verminous, ophthalmic and glandular affections, typhus, catarrhs, pneumonias, asthmas, dropsies, gangrene and debility, resulting from poor and insufficient food and ventilation, from exposures, humidity, filth, crowding and the like, among animals, are good pathologico-anatomical types of morbidity in man. The sheep-rotting typhus and ship and jail typhus, generated by bad air, bad food, filth, crowding, &c., mutually illustrate each other, and the same parallelism may be traced among animals and men, when recklessly exposed to solar heat in hot climates to which they have not become thoroughly acclimated.

In this, as in the preceding papers, the desultory Notes submitted to the reader relate to general rather than to special pathological anatomy, and will, it is hoped, be not the less acceptable because they treat of some topics which are wholly omitted, or little appreciated, in most systematic treatises. Be this as it may, these Notes, whether good or bad, are the results of experimental research, although neither the limits of this Journal, nor the leisure of the writer, will allow of the introduction of numerous recorded illustrative examples. The plan adopted neither admits nor requires a methodical arrangement.

INTUSSUSCEPTION.—I do not propose, at present, to inquire into the importance of this lesion, which, I venture to think, has been underrated, because it is generally a secondary one in which neither intense inflammation nor gangrene can be detected after death. I have good reason to believe that it sometimes has occurred in less than 24 hours from the invasion of fever, and has persisted until death, although the

post-mortem examination revealed, in many instances, nothing more than firm, congested invaginations, ranging from one to six, from which it is reasonable to infer, at least, that the equilibrium of the abdominal circulation must have been, during life, more or less impeded and disordered.

Although I have records on a large scale distributed through XXI vols. ms., I have not found leisure to calculate the numerical ratio of this lesion in the dead body. It is found in the victims of fever, cholera, and many other diseases, to an extent scarcely credible, if books, instead of nature, be appealed to for information. Its frequency is so great that I will not venture an opinion, in this behalf, in advance of an actual enumeration. It is sufficient to say, that an experience, extending over many years, shows that this is a very common lesion.

Admitting that this lesion is for the most part not primary but secondary—admitting that the morbid alterations usually found are not so marked as in fatal cases of enteritis, hernia and dysentery, still it does not hence follow that a secondary lesion is unimportant. It often happens, in diseases which are apt to run a specified course without proving mortal, that a slight secondary lesion is virtually the disease, seeing that it turns the scale in favor of a fatal termination in subjects whose antecedent maladies had already almost exhausted the vital forces. Fatal lesions do not always present very marked or great organic changes, particularly when they arise incidentally as complications during the advanced stages of diseases with which they have no essential, common, or characteristic connection.

Intussusception of the bowel encloses more or less of the mesentery. It is the latter which resists and limits the morbid or perverted action of the intestine. The mesentery, with its double *laminae* of the peritoneal membrane enclosing adipose tissue, glands, blood-vessels, lacteals, and nerves, from its anatomical arrangement being but little distensible, opposes, beyond a certain limit, an effectual barrier to the progress of the invaginated bowel.

The mesentery, fixed at its origin for six or seven inches about the second lumbar vertebra, thence radiates fan-like upon its periphery to twenty-five or thirty feet, virtually enclosing the intestines, as well as fat, glands and vessels, presents on its inner portion next the bowels a resisting band which generally cannot pass far into the invaginating sheath, owing to the tension which takes place in this structure, consequently the invaginated portion is arrested, how strong so ever may be the morbid intussusceptional action. In Ranking's Abstract, a case of intussusception is reported, (from the *Medical Times*, April 20, 1850,)



in which the patient recovered after having passed, per anum, four and a half feet of intestine. In this and in some similar cases, in which a considerable extent of bowel has been discharged, there has probably been a progressive ulceration of the tense edge of the entering portion of the mesentery, by which it has been gradually detached from the intestine, the latter advancing *pari passu*. The number of intussusceptions in the same subject has never exceeded six in my numerous post-mortem examinations. The inverted or invaginated bowel is double, which, with the invaginating portion, constitute three layers of the intestines, or, what is virtually the same, the invaginating portion is double and the intruding or descending tube single. An intussusception, viewed interiorly, presents the mucous surface of the entering portion, next two opposing serous surfaces in contact, next two mucous surfaces in contact also, and, finally, the outer or serous surface. Of these three, the inner is comparatively freer from engorgement, vascularity, discoloration and tumefaction. This part of the intestine is sometimes rather non-vascular, pale, wilted, (if the expression be allowable,) while the external duplication environing it presents a broad, congested, swollen, dark, annular band.

Without attempting to discuss the diagnosis of intussusception, which is very obscure, it may be proper to remark that its occurrence is seldom characterized by acute pain. But it must not be forgotten that the intestines, unless in a high state of inflammation, have a comparatively small degree of sensibility. In yellow fever cases, treated by enormous blood-lettings which produced syncope, followed by tenesmus, irregular pulse, gastric oppression, and speedy death, I have found the most numerous intussusceptions.

I have already stated that I cannot at present give the statistics of this lesion, which is very common in New Orleans, and which is either almost unknown or has been overlooked elsewhere. M. Louis has not recorded a case of it in his work on yellow fever.

The same distinguished author has met with but three cases of intussusception in his voluminous *Researches on Typhoid Fever* (2nd ed. i., 161. Paris, 1841.) In alluding to these cases, the symptoms of which had not been investigated during life, he asks with his usual candor,—what conclusion can be drawn from so small a number of facts? (*Que conclure d'un si petit nombre de faits?*)

Morgagni records a case of intussusception which occurred in December, 1724, and cites several other cases which his cotemporaries or predecessors had observed.

Many years ago on finding intussusceptions to be very common in the fevers of New Orleans, I looked into such books and medical journals

as I had access to, without meeting with recorded cases in the victims of fever, excepting the following and a few others :

In 1805, Dr. J. Stuart, of Philadelphia, dissected a child aged 3 years, that died (Sept. 30,) of yellow fever ; and having found six intussusceptions in the small intestine, he concluded that, as a case of this kind, according to him, had never before been known in malignant fever, it must have been accidental—an opinion which he abandoned a few days after, for on opening another yellow fever subject, he found three intussusceptions, whereupon he maintained that this lesion was caused by the absence of the stimulus of the bile, owing to the contraction of the ductus communis coledochus “ which refused a passage to the bile.” He says that the lower portion of the bowel passes into the upper, and gives an illustrative plate ! This is an error ; at least, I have always found the reverse true. This is the only case in which he gives any details, except the fact of intussusceptions in another, and these details by the way are quite imperfect ; both the brain and chest were unopened ; the “ adeps yellow ; omentum wound up in a roll ; liver an intense orange ; stomach, colon, rectum and bladder contracted.” (Coxe. *Med. Mus.* ii. 1806.)

In the same epidemic, (1805) Dr. Lowber made twenty-one dissections, reported in the Medical Museum of the year following, (but they contain internal evidence of imperfection which renders them of little value) the first case, that of a child 6 years old, presented two intussusceptions.

In the American Medical Recorder, vol. ix, 1826, Samuel A. Cartwright, M. D., a distinguished physician of Natchez, now of New Orleans, reported thirteen post-mortem examinations of yellow fever subjects who perished of that disease in 1823 and 1825,—a synopsis of ten of these cases I made a few years ago, (from a borrowed copy of that periodical) three cases being for certain reasons omitted. On referring to the ten cases, I find that John Cochorn had two intussusceptions ; Schlegel 4 and T. Place had several intussusceptions. The remaining three of whose cases I have taken no notes, being excluded, the proportion of intussusceptions is to the whole number nearly as one to three.

The following case of intussusception supposed to have been of long standing, though but a secondary lesion, is reported by John C. Cheesman, M. D., of New York. The case is re-produced from the American Medical Recorder of Jan. 1821, and is given entire because the fundamental lesion of the stomach, which the dissection revealed, had not been suspected by the medical attendants during the long illness of the patient :

*A singular Case of Ulcerated Stomach, unattended, during life, by any symptoms of disease in that organ.*

ON the 1st of June, 1819, a gentleman about sixty years of age, who had led a remarkably regular and temperate life, was attacked with a peculiar uneasiness in the abdomen, which was thought to arise from irregularity of the bowels. A variety of evacuant medicines were used, but gave him no relief. Fomentations and anodyne embrocations procured only temporary benefit. He continued in this state for about a month, with little or no variation, when he was suddenly seized with a violent pain in the superior part of the rectus abdominis muscle, extending down to the umbilicus, and inclining to the left side. In consequence of the violently spasmodic affection of this muscle, a variety of anti-spasmodic medicines were directed, but with very inconsiderable advantage. Blood letting, warm bathing, &c., were productive of no better effect. It may be proper to state, that this gentleman had, for several years, suffered occasionally from a rheumatic affection of the right leg, thigh, and hip, which had produced considerable lameness, and greatly impaired his general health. The disease under which he now labored, was thought to be of the same nature; and as all the ordinary remedies had failed in affording alleviation to his distress, he was advised to try the effect of sea-bathing. This remedy was faithfully had recourse to, but without any advantage to the local affection, or any improvement to his general health. He was gradually exhausted by this continual irritation, and died on the 30th of August, 1820.

*Dissection.*—Upon raising the abdominal parietes, a firm adhesion was found to exist between the peritoneum and the convex surface of the liver, immediately under that part of the rectus muscle in which the pain and spasm had been seated. The superior portion of the stomach also was completely united to the concave surface of the liver. The stomach was then particularly examined; and on its external surface was discovered *an ulcer* of about three inches in diameter, the edges of which were high and much jagged. Intussusception was found in several portions of the intestinal canal.

The intussusceptions may account for the strange uneasiness which the patient experienced in the early stage of his disease, and the unusual adhesions which have been described, may explain the pain and spasms of the rectus muscle; but there was no symptom whatever which indicated disease of the stomach. A variety of opinions were entertained respecting the nature and precise location of his complaint but not one of the medical gentlemen who visited him, had any suspicion of an affection of the stomach.

Mr. Hunter, great as he is as an original thinker and experimenter, seems to have entertained extravagant views of the pathological anatomy of intussusception. The bowels are not quite so loose as his statement, wherein he maintains that “we can readily see how an intussusception, once begun, may have *any length of gut drawn in.*” He does not appear to have seen any case himself. He reports, however, two cases; in the first, “one half of the large intestines filled up the other, and



that when the patient went to stool he only emptied the ileum." In another case, "the ileum and its mesentery, together with the cæcum and ascending colon, entered into the descending part of the sigmoid flexure of the colon."

Mr. Hunter says, in his work on the Blood, that "an intussusception can never be perfectly known till after death." He recommends "the giving vomits to invert the peristaltic action!"

I beg leave to subjoin the following case, taken from the *Transylvania Journal of Medicine*, of 1835:

*A case of intussusception in which an operation was successfully resorted to by John R. Wilson, M. D. Communicated by Mr. W. W. Thompson, Student of Medicine.*—This operation, novel, I believe, in the annals of surgery, was performed by my friend and preceptor, John R. Wilson, M. D., then of Rutherford county, Tennessee, now of Mississippi, between the 25th and 30th of December, 1831, and with complete success. The following report of the case is given from memory, but is substantially correct.

The subject of the operation was a negro man, aged about twenty years, the property of Mr. Charles Dement. The patient had labored for seventeen days under bilious colic and stercoraceous vomiting, and the other more alarming symptoms of this disease, had appeared. All the active purgatives were administered in vain, and on the evening before the operation was resolved upon, as a dernier resort, some ounces of crude mercury were given. The constipation remaining, with the other formidable appearances, it was plain that nothing but the knife could save the patient.

The operation was performed in the following manner. An incision was made along the linea alba, commencing above the umbilicus and extending two or three inches below it, being in all about five inches in extent. The bowels being protruded through the wound, that portion involved in the stricture came into view. It was found to be in the *ileum*. The bowel was grasped above and below the obstruction, and after several efforts of considerable force, the adhesion gave way. The exertion necessary to break up the attachments, it was feared, might lacerate the intestine: but no such accident followed. The bowel strangulated was of a dark livid appearance, evidently approaching to gangrene, and of double its ordinary size. The vessels of the omentum were also deeply engorged with black blood, apparently stagnant. The parts seemed to be on the verge of mortification. After returning the intestines into the abdomen, having carefully excluded the atmosphere during the operation by a warm, moist cloth spread over the viscera, the wound was made secure by a few stitches with the needle, and adhesive strips. The patient was put to bed, and in a very short time voided the mercury which he took the evening before. His recovery was rapid and entire.

The success of this case, in which the operation was so long deferred, and at last performed under such unfavorable circumstances, warrants the propriety of resorting to it in the disease, and proves that relief may occasionally be afforded by this means, when all others have failed.

TRAUMATIC PERITONITIS. CASE. MEDICO-LEGAL INVESTIGATION.—*History*.—1848, March 2, 6¼ P. M. Alexander Smith, aged 36, of good constitution, captain of the British ship Charlotte, had been stabbed by the mate of the vessel a few minutes before I was called to see him. Present condition: a considerable portion of the ileum with its mesentery, together with a part of the greater omentum, protruded prominently and strongly from a penetrating wound of 3½ or 4 inches in length, commencing in the middle of the lower third of the rectus, between the umbilicus and pubis, dividing the outer half of the muscle obliquely outward and upward, without having divided the epigastric artery or any of the protruded organs. Considerable serosity, slightly colored with blood, escaped from the wound. The protruded parts were returned into the abdomen without having sustained any apparent injury. As there was no hæmorrhage, neither was there any faecal effusion nor gaseous emissions, it was supposed that no portion of the bowel had been divided. Moreover, the knife with which the injury had been inflicted was a dull one. There was a strong tendency to expel the returned parts, which were kept back with difficulty until after the dressing of the wound was completed. The wound was closed with sutures, which did not penetrate the peritoneum; a bandage was applied, according to art, etc., etc.

The patient vomited several times, was thirsty, and inclined to sleep.

There was also an oblique wound in the middle of the forearm which divided a part of the supinator radii longus muscle.

It is not intended to give the notes taken twice a day concerning the progress of this case. It is sufficient to say, that the wound in the arm presented no unfavorable appearances. The patient was treated, when reaction came on, with bloodletting, leeching, opiates, restricted diet, revulsives to the extremities, etc., having been assisted with the advice of Drs. Tompkins and Farrel.

I may here remark, by way of anticipation of the sequel, that the sulphate of morphia was administered in large and repeated doses, even before the escape of flatus and faecal extravasation were recognized. This drug produced extensive itchings of the skin, and, of course, torpor of the bowels also. The therapeutic and surgical management, though recorded with detail, are omitted as unimportant to the purpose of this report.

On the third day after his injury, he began to vomit, or rather to gulp up his drinks, as is sometimes witnessed in the last stage of puerperal peritonitis, and in yellow fever. The abdomen become somewhat

distended or convex, but not painful except at the seat of the wound. Bowels constipated. The head and shoulders on the one hand, and the hips on the other, were elevated so as to relieve the tension of the abdomen and peritoneum as much as possible.

On the fifth day the wound appeared closed, except at its upper angle, from which began to flow a dark, thin serosity, thin fæces, shreds of omentum, etc., in the most fœtid condition. The position was changed so as to favor the escape of these discharges.

He died at midnight, March 9.

March 10th, noon. I made the post-mortem examination 12 hours after death, in the presence of Drs. Tompkins and Farrel, the coroner, and the jury of inquest. Rigidity of the limbs; adipose and muscular tissues moderately developed; slight convexity of the abdomen; much cadaveric injection of the skin in dependent parts; some elevated portions of surface mottled with red discolorations; wound of the left arm nearly healed.

*Abdomen* : The lips of the wound, which were but slightly adherent, were tumid and black, and the surrounding tissues were vascular and injected. A considerable quantity of thin fæces and purulent serosity escaped from the peritoneal sack.

The greater omentum, much injected, thickened and black, was consolidated into a mass which adhered to the intestines being opposite to the wound. The lesser omentum, and the mucous tissue of the stomach and of the bowels, as far as examined, were congested and of a dark red hue. The serous coat of the stomach was natural.

The peritoneum was almost everywhere thickened, injected and coated with rough, brittle, spongy masses of fibrinous exudation. The subperitoneal tissue was generally quite black. The peritoneal exudations of gelatinoid deposit, which agglutinated the omentæ and the duplications of the intestines, became, in some places, concrete or crusty. The rectum, contracted and injected, contained lumpy, healthy fæces, its subperitoneal tissue, including that of the residue of the large intestine, jejunum, and also the tissue on the superior portion of the bladder, were black.

The lower third of the ileum, variegated with red and black, was collapsed. A little above the ileo-cæcal valve, near the spine, this intestine was divided and gaping, to the extent of two-thirds of its calibre, the wound being about mid-way between the longitudinal and the transverse axes of the bowel; fluid fæces flowed from above and below this wound on making pressure. The lips of the wound were tumid, dark and congested.



The cohesion of the bowels, omentæ and mesentery, was diminished, and approximated gangrene.

Notwithstanding the great vascularity and congestion of the abdominal organs, scarcely any blood followed the knife. The blood seemed to have been transformed into a semi-organized or semi-solid state, not appearing like ordinary coagula.

As the knife was dull, it probably passed through the floating convolutions of the bowels without injuring them, until it caught upon its point, the ileum opening it against the resisting spine or abdominal wall opposite to its entrance.

The evidence of fæcal effusion did not appear until more than three days after the stab.

The stomach was very small—about half the usual size, and contained two or three spoonfuls of chymous paste. Although this condition of the stomach was probably owing to contraction, yet the patient often remarked that he could take only a very little fluid at once. Hence he drank often. His thirst was great.

The subperitoneal tissue was almost everywhere intensely black, but its cohesion was not apparently gangrenous.

The tract of the knife was the focus of the morbid alteration; nevertheless, the fæcal effusion which reached the peritoneal coat of nearly every abdominal organ gave an extension to vascularity, discoloration, gelatinoid depositions and the other alterations enumerated, so that, adopting the language of the received nosology, this case not only represents peritonitis proper, but also other inflammations almost as numerous as the abdominal viscera. It is with this view that the case is submitted to the reader's attention, showing, as it does, that identity of tissues rather than the mere neighborhood of separate organs, should be duly identified, studied and appreciated in pathology and morbid anatomy.

Surgical cases very often present to the physiologist and pathologist the best kind of experiments, that can be contrived or conceived, for discovering and fixing the fundamental principles of medical science by the experimental method.

**PULMONARY COLLAPSE AND DISTENTION.**—In the dead body, the collapse of the lungs is frequently so great that the inexperienced dissector might be led to regard it as a morbid alteration due to atrophy or the imperfect development of these organs. This condition differs from that termed *atelectasis pulmonum* or the imperfect expansion found in the dead new-born foetus whose lungs had never been inflated by respiration.

Nor is this collapse due to a morbid consolidation or contraction, the lungs being natural in consistence and color, and easily distended by artificial inflation. The cause of this collapse is probably altogether owing to the imperfect respiration which sometimes occurs and continues for hours before death, the last moment being almost literally an expiration of all the air from the whole pulmonary apparatus.

On the other hand, the lungs are, from a different cause, that is, from large inspiration and incomplete expiration, greatly distended at death, whereby they are made fully to occupy the entire chest, without any tendency to shrink upon opening the thoracic cavity so as to admit the atmospheric air. Ante-mortem emphysema, and the post-mortem evolution of putrefactive gases alike cause distention of the lungs. An analysis of these conditions and their antecedents will not be omitted by a careful pathologist in making up his opinions thereupon. Such facts are worthy of being recorded even though no opinion can be given of their nature or import.

Independent of putrefactive agency and under various states of atmospheric pressure and temperature, the pleural cavities, from unknown causes, are sometimes in a partial state of vacuum on the one hand, or, on the other they are tympanitic holding a quantity of air in a state of compression, the air entering in the former, or escaping in the latter condition with a noise on opening the chest. The latter may be owing to exosmosis from the air-cells.

**DESICCATION OF THE CORNEÆ BEFORE AND AFTER DEATH—***Cholera, terminating in Coma, Convulsions, complete desiccation of the Cornea. Death.*

Feb. 12 and 13, 1849. \*\*\* Called to visit a female child, aged 3 years, born in England; resident in Felicity street; sick two or three days with choleraic symptoms; comatose and almost entirely insensible for 24 hours; retains the power of swallowing; drinks water greedily, and shows uneasiness from the application of mustard plasters to the skin; has had several convulsions, with cramps, from the beginning; is wholly motionless as a log, except from the clonic spasms which are sometimes general, sometimes partial, now flexing the fingers, then extending and fixing both arms rigidly from the shoulders to the tip of the fingers, having occasionally, fleeting wavy ridges of muscular contraction which traverse the body in different directions; respiration laborious; pulse full and tardy. The eyes are injected; eyelids widely open, unwinking, fixed as if in a full gaze; pupils dilated permanently, being unaffected by light; eye-balls inclined upward.

The corneæ and exposed portions of the eyes, at the first visit, were of a dull glassy appearance, being covered with a dense semi-transparent layer of gummy exudation nearly dry, extending from lid to lid.—

**Treatment :** bathe and wash the eyes ; revulsives to the surface and extremities ; small doses of calomel.

Second day : The eyes had not been washed ; eyelids fixed, widely open, unwinking ; corneæ glassy, dry like paper, covered with an opaque almost horny exudation, thickest at the angles of the eyes, and the inferior margins of the lids ; pupils dilated, fixed and not affected by the light ; still able to drink ; nearly insensible ; coma increases.

Died the next day.

T. C., Irish, aged 30, resident six years, stout and fleshy, subject to scrotal hernia. Suffered the usual symptoms of cholera, as vomiting, purging, cramps, coldness, &c. His mind was clear until death, which took place Dec. 30th, at 10 A. M. Two hours after death the neck and under jaw were rigid, the skin marbled in dependent parts ;—the corneæ dry, opaque, flattened, and even corrugated—a dense mucosity flowed from the outer canthi of the eyes ; spontaneous discharges of the choleraic liquid per anum ; some convexity of the abdomen ; distention of the external veins ; blood letting was performed in the usual manner, from one to two ounces flowed in a jet, and as much more dribbled from the orifice, occasionally jetting when the muscles were agitated.—The blood formed a feeble clot, with the usual serosity. Contractility powerful and undiminished during the observations. Axilla  $91^{\circ}$ —bend of the arm  $89^{\circ}$ —rectum  $101\frac{1}{2}^{\circ}$ , and stationery—axilla  $2\frac{1}{2}$  hours after death  $96^{\circ}$ —brain  $98^{\circ}$ —epigastrium and liver each  $103^{\circ}$ , for 15 minutes, being stationery—heart and left lung each  $99\frac{1}{2}^{\circ}$ —an offensive gas escaped from the peritoneal cavity ; the bowels full of choleraic liquid.

**GASIFORM AGENTS.** *Post-mortem, and even pre-mortem* gases arising from fermenting food, and animal putrefaction, possesses great expansive forces distending the cavities, particularly the hollow organs of the abdomen, as the stomach, bowels, and peritoneum, extending to the blood-vessels, and, the more so of course, when the weather is hot and the autopsy is delayed. Such a force by distending the organs, would often tend to destroy or diminish the characteristic appearance of lesions, as congestion, vascularity, injection, thickening, cohesion, etc., and while thus obliterating real lesions, might cause illusory appearances altogether post-mortem, simulating morbid anæmia, thinning, rupture, etc.

Pulmonic lesions are often obscured, if not obliterated by post-mortem gases, as apparent crepitations, softenings, congestions, etc.

*Air in the blood-vessels and heart.*—Atmospheric air, however pure, when introduced into the blood-vessels and heart of man and animals, proves fatal. This shows the great danger of introducing foreign bodies into these organs, while it rivals the gravest lesions of the nervou



system both in the rapidity of its march and in the spasmodic character of its symptoms and its fatal results.

M. Velpeau says that air thus introduced by injection or suction (*aspiration*) kills dogs, horses, and mules, in from five to fifty minutes, and sometimes as rapidly as lightning, and that he has known forty persons thus to perish during surgical operations. (*Méd. Opérat.* i. 40-45, Paris, 1849.)

M. Magendie, in his work on the Blood, says, that if air be injected into the jugular vein of a dog rapidly, the death is instantaneous, the heart being thereby distended without having the power of contracting. Such is the general import derivable from numerous authorities.

The following extraordinary case is subjoined, because I supposed at the time of its occurrence that the immediate cause of death probably was the result of air spontaneously entering into the system through a gaping orifice made for blood-letting. Nevertheless, the critical reader, will see that as several other potent causes of death were in operation, this opinion is open to objections.

The symptomatic history of the case though very imperfect, was related by several eye-witnesses who saw or attended the patient, and who assisted in a part of the post-mortem examination, the notes of which, now reported, were, as usual, made on the spot. The complexity and obscurity of the case constitute its merit. It is now more than a decennium and a half since a man aged 20, born in the North, of vigorous constitution, and for several years, when not voyaging on the Mississippi river, a resident in New Orleans, entered the hospital having been two days sick with yellow fever. He had symptoms indicating congestion of the brain, with slight delirium. He took by mistake twenty grains of the sulphate of morphia instead of twenty grains of quinine. Subsequently a student bled this patient about two pounds. The next day after having taken the morphia, the patient was able to speak intelligibly. He had, however, in the meantime, several convulsions, and having sunk into a comatose condition, died on the fourth day of his illness.

*Post-mortem Examination.*—Dead about five minutes; body warm; eyes prominent, injected and slightly yellow; free from rigidity; adipose and muscular tissues well developed, being natural in color and consistence; great convexity and distension of the abdomen; bloody foam issuing from the mouth and nostrils; skin dark, purplish and mottled in patches, having a slight yellowness; external veins, particularly the frontal, much distended; the subject bled freely from incisions in all places; the sides of the face, and particularly the neck, emphysematous;

the latter greatly inflated and crepitant, the air escaping with every incision in the cellular membrane.

The right arm, from which he had been bled, was considerably tumefied; the orifice in the vein gaped widely. The left arm was still more swollen, the cellular tissue of which was infiltrated with blood and with air, which latter escaped in bubbles on making incisions through the skin; the large veins contained air-bubbles and clots of blood.

*Head.*—The integument of the head, the great sinuses and the substance of the brain, discharged much fluid blood; the pia mater vascular, its vessels dilated and turgid in the minute branches only; bloody serosity, from seven to eight ounces, chiefly exterior to the cerebral portion of the arachnoid; dark roseate subarachnoid deposit or exudation upon the convexity of the hemispheres.

*Neck.*—Swollen, as already described; the wind-pipe and appendages natural; the jugulars distended with air mixed with blood.

*Chest.*—The right side of the heart was completely distended with air and a little froth, but no blood; other organs natural.

*Abdomen.*—*Serosity*, in this cavity, about two pounds. The submucous tissue of the stomach had vascular *arborizations*; the intestines contained a little chylous paste, some bilious fluid and fæces; the entire canal distended with air; its contents had a natural fæcal odor; the urinary bladder enormously distended; the liver, except a slight brittleness of texture, was natural, its coats normally adherent; the gall-bladder distended with a thick, dark yellow bile; other organs natural.

It is probable that the air entered the gaping orifice in the right arm, yet not suddenly nor in large quantities at first, but very gradually, so that it was distributed through the entire capillary system, reaching the other or left arm, inflating much of the cellular tissue. This air did not originate from putrefaction, which had not begun in the body.

In the rôle of morbid agents in this case, as fever, poisoning with morphia, effusion and cerebral lesions, none probably played so fatal a part as the aerial inflation of the right side of the heart, including the great veins and cellular tissue. It has been already stated that experimenters have proved the almost instantaneously fatal consequences produced from air introduced into the large vessels and heart, by the obstruction it interposes to the cardiac circulation.

After having copied for the press the above case, the exact date of which I have purposely omitted, I examined Dr. Stokes' valuable work on the Heart, published in 1855, and was pleased to find the following remarks, (which I condense) under the head "*of air in the heart and veins and solid viscera soon after death.*"

"The observation of an unusual appearance of congestion in the superficial veins soon after death, as well as that of the production of air in the heart and viscera of the abdomen, in this disease [fatty degeneration of the heart] is due to Professor Smith. Within a short period after death, he has found the heart inflated like a balloon. The veins, too, contained air, and along the course of the superficial vessels he observed a peculiar mottled appearance of the surface. \* \* \* I once saw air in the liver of a man who died of a rupture of a small aneurism of the aorta into the œsophagus. Dr. Graves quotes from M. R. de Gex two cases of emphysema, one after profuse epistaxis, and the other after profuse hæmorrhage which followed a surgical operation. Air was found in the heart, etc., upon dissection in both cases."—354-5.

Dr. Stokes, however, strangely enough, does not recognize the occurrence of air in the heart, vessels and other organs, in any other relation excepting that of fatty degeneration of the heart, including an oily state of the blood. The chemical theory which he assumes, (that of the combustion of fat) does not appear to be sustained by the cases he has adduced, while the cases themselves are too few and too complicated with other paramount morbid conditions, to afford even a probable conclusion in this behalf. The question of priority claimed for Professor Smith, of Dublin, may be good for that city, though, perhaps, not so as against New Orleans.

During the last nineteen years, it is believed my *ms.* volumes will show several recorded cases, noted very soon after death, and wholly independent of post-mortem putrefaction and traumatic lesions, of emphysematous inflation of sundry regions and organs, including air-bubbles in the veins, more particularly the veins and capillaries of the ventricles and membranes of the brain. Little bladder-like bubbles are sometimes found in the choroid plexuses. The vessels of the pia mater often contain innumerable bead-like strings of air-bubbles.

Morgagni, in his *Anatomical Researches*, (*de Sed. et caus. morb.*) mentions a case which occurred in June, 1709, in which air-bubbles were found in the heart, together with the large blood-vessels and the cerebral membranes of a man aged 18, who died tetanic, twenty days after having had his heel crushed by the passage of a wagon wheel. (*Epitol.* LIV.) Morgagni refers to the disengagement of air in the blood-vessels, in this case, as proving in the language of the ancients, the putridity of the humors. This case, however, is far removed in origin and nature from such as I have occasionally met with, in which neither traumatic lesion nor putrefaction existed.

As the passage above quoted from Dr. Stokes was never read by the present writer until Jan. 24, 1857, (the book having been published in



1855,) it may be proper to quote an humbler though older authority—namely, myself. In the April number of *The Western Journal of Medicine and Surgery* for 1843, pp. 262–263, I published the following statement in *italics*: *GASEOUS DISTENSION of tissues, though generally the effect of decomposition, is not always so. I have seen it in five minutes after deaths the most rapid, in bodies that appeared as free from all the appearances of putrefaction as if they had died from a ball through the brain. It appears in the submucous tissue of the stomach, in the blood-vessels of the brain, in the cellular tissue of the neck, and in the HEART.*

The following case, though devoid of autopsic evidence, may be admissible in this connection, as suggestive of the hypothesis that in the sudden deaths which are sometimes witnessed immediately after the most favorable and rapid deliveries in child-birth, air enters into the womb directly after the escape of its solid contents, and thence through the still open uterine veins which had communicated with the placenta, thus passing by this route into the circulation and the heart.

October 18, 1842.—Mrs. G., aged 25, resident in the swamp zone of the city, where she had recently suffered, though not severely, with symptoms of intermittent and dysenteric fever; rested well last night; was taken in labor at day-break; is feeble; pulse and respiration somewhat accelerated. I had delivered her several times previously, but never found her more cheerful than at present. The labor, which was natural and easy, lasted three hours. The child was large and vigorous. In a few minutes after its birth, the placenta came away readily and without the ordinary amount of hæmorrhage; the womb immediately contracted into a firm globe; when, after having been all the time in good spirits, she began suddenly, and without complaining, to breathe in a noisy, hurried manner; her pulse became suddenly almost imperceptible, her senses remaining unimpaired. She continued to sink, though treated promptly with brandy, quinine, opiates and external stimulants. She died in six hours after delivery.

*POST-MORTEM CHANGES in seventy-six hours after death and two days after interment, together with a case of Spontaneous Rupture of the Stomach.*—Having been summoned by the Coroner of the Parish of Jefferson to make a post-mortem examination before a jury of inquest, at the McDonald cemetery opposite New Orleans, a mile from the river, I proceeded to the place of disinterment at 12 o'clock M., October 1st, 1842, the weather being dry and moderately warm.

*Previous History.*—H—— J——, a mulatto, (whom I had attended some years before for gun-shot wound,) aged thirty-five, resident in New Orleans for twenty years, stout, bony, muscular, with but little adipose tissue, but always healthy—workman in the foundry at Gretna—at

8 o'clock A. M., September 28th, 1842, after working as usual, ate his breakfast of beef-steak, potatoes, bread and coffee, abundantly—left the table, walked ten paces, sat down, placed his hand over his stomach, knelt down, said he was “devilish sick,” the only words he spoke; his pulse became imperceptible, his skin cold; he was dead fifteen minutes after finishing his meal; was buried the same day; and, by order of the Judge, was disinterred for inquest seventy-six hours after death. Before reaching the coffin, cadaveric gas became intolerably offensive. The coffin was large, strong and apparently tight; the corpse, which was much enveloped in cloths—the head in bandages—filled the entire coffin, except that part corresponding to the legs. The coffin contained about one gallon of liquid, supposed to be an exudation from the body, being little less fluid than water, having an oily, bloody and turbid appearance; some of it had leaked out of the coffin.

Corpse swollen, puffy; universal gaseous inflation of the cutaneous, cellular, adipose and muscular tissues, doubling the size of the body, not excepting the extremities; integuments of the face and head from two to three inches thick; lips, ears and eyelids, four inches; the neck, three or four feet in circumference; the scrotum, nearly two; the penis, one; muscles, bloodless and softened; great abdominal convexity from gaseous distension; foam issuing from the mouth and nostrils.

*Head*: hair loose; pericranium and dura-mater non-adherent, without much loss of tenacity; arachnoid and pia mater softened; brain like molasses or pus in consistence, being of a dirty grey or white color, with sanguineous tints in dependent parts; this description applies to the upper portion of the spinal marrow; the vertebrae were separable by the hand alone.

*Chest*: lungs, cohesion moderately diminished; color, gray, with redness in dependent parts, being greatly collapsed, occupying about one-sixth of the cavities; mucous tissues of the air passages reddish; bloody effusion, mixed with serosity, about four pounds; pericardium puffy; heart thin, flabby, pale, nearly white, totally empty, (as were its great vessels,) and though its muscular tissue was effervescing with minute air bubbles, it was free from elasticity, being only about one-fourth of the usual size; aorta, pleuræ, etc., nearly natural.

*Abdomen*: intestines distended, pale, bloodless, not tearing without considerable force, being moderately softened; the mucous tissue pulpy, and free from arborizations, etc.; the bile had infiltrated the subjacent tissues; the gall bladder empty, its coats puffy from gas; the liver was nearly natural in cohesion, elasticity and color; the stomach, small and attenuated, was *ruptured* about four inches along its lesser curvature; it contained about a pint of semi-fluid food; about the same quantity had

escaped through the orifice (which was somewhat irregular, though longitudinal,) and lay on the left side of the spine near the diaphragm, resting on a clot of blood as large as the hand. Here the examination stopped; other organs not dissected.

**FIBRINOUS CONCRETIONS IN THE HEART.**—Polypous concretions of a very dense and tenacious kind are often found planted in and adherent to the interior cavities and columnæ carneæ of the heart. The physiological functions of this organ must be much deranged or impaired by the interference arising from these formations which are virtually foreign bodies. Although in general they are secondary results, yet in the last stage of disease, they probably act a fatal part much oftener than is usually suspected. These whitish and yellowish bodies are not formed after death as many have conjectured. Many post-mortem examinations made a few minutes after death, show that these bodies are in different stages of organization and cohesion; some are composed of clots of normal blood; others are more firm and consist of soft masses and bands of colored fibrin; not a few of these are cord like, firm, exceedingly elastic, and require much force to break them, being semi-transparent, yellowish or whitish, and free from redness, adherent and moulded to the cavities and vessels of the heart, and bear configurations incidental to the long continued action of that organ, being nearly as strong as the muscular tissue itself.

**FIBRINOUS CONCRETIONS WITH OCCLUSION OF THE ARTERIES IN A COMPLICATED CASE OF CHOLERA.**

May 14, 1851; 11 A. M.—R. J., Irishman, aged 31, laborer, resident three years; says he has suffered from several attacks of King's Evil; is scarred in the neck from the same; has been suffering for several weeks from diarrhœa, but without having quitted his daily labor until yesterday, when, at 2 A. M., he was seized with cholera; the vomiting, purging, and cramps continued until 9 A. M., to day, when the cramps and purging ceased; the vomiting still is violent.

*Present state:* Eyes prominent and injected; face vividly red; tongue slender, pointed, red, moist, and nearly clean; intense thirst; skin of the hands wrinkled; no petechiæ; neither is there distention nor tenderness of the abdomen, although there is great rigidity or tension in the recti muscles; respiration quiet, not full; pulse most generally imperceptible at the wrists; axilla  $98\frac{1}{2}^{\circ}$ ; bend of the arm  $96\frac{1}{2}^{\circ}$ ; intelligence normal.

*Left leg:* Cold, cyanosed, nearly black from the knee down; complete paralysis of sensation of the leg, excepting a part of the sole of the foot, which alone is sensible, the residue being insensible to pinching, pricking, mustard, friction, heat, etc. The limb is elastic, firm; neither



tumefied nor œdematous ; temperature estimated at 80° to 85°, although hot applications, frictions, and bandages have been used.

*Treat.* May 13 ; Sinap. to limbs and epigast. ; brandy ; quin. 3ss ; tinct. opii ʒi for an enema ; at night, mixture carb. ammon. and camph. ʒiv ; a table-spoonful for a dose every half hour.

*Treat.* May 14 : Mist. anti-emet., f ʒvi ; table-spoonful every 30 minutes ; 30 grs. quin. in beef tea for enema. At night to be purged with mass. hydr. et colocynth. Brandy.

May 15 : Pulse distinct ; veins full ; skin flushed ; heat increased. The patient says he is better to-day. Leg in the same state ; feels at the sole of the foot when heat is applied, etc.

*Treat.* May 15 : Epispast. 6 by 8 in. to epigast ; colocynth enema with 20 grs. quin. ; brandy ; phos. calc. ʒiii ; morph. sulph. gr. ss, in divided doses. *Noon* : Ext. colocyn. 3ss, calom. 24 grs., in 6 pills ; 2 every hour ; sinap.

May 16 : Pulse irregular, small ; sighing ; hiccough for 12 hours ; respiration small and imperfect ; face flushed ; left eye open during slumber ; tongue red, moist, tumid ; no purging ; vomiting infrequent ; speaks despairingly as to his chances of recovery ; intelligence unchanged. Leg cold, insensible, intensely cyanosed, nearly black.

*Treat.* May 16 : Creosote gtt. 6 ; mucil. ʒviii ; tea-spoonful every 15 minutes. Capsicum, ʒss, ol. tereb. iv, for frictions. *Evening* : Pulv. camph. gr. vi, pulv. opii. gr. iii, in 6 pills ; one every hour. *Night* : Mist. ammon. carb. et camph. f ʒxi ; table-spoonful every half hour ; brandy ; sinap.\*

May 17 : Died, without delirium.

Post-mortem examination two and a half hours after death : Body rigid, temperature about 85° or 95° ; face, right leg, and skin generally pale, excepting the left leg which retains its natural color ; muscles natural ; blood diffuent and non-coagulable. Tongue and fauces natural.

*Chest* : Heart and cavas much engorged—the lungs slightly so.

*Abdomen* : Lymphatic glands including those of the exterior, firm and enlarged.

The mucous tissue of the stomach, much injected with black punctiform dottings, chiefly upon the summits of the rugosities of the membrane, which latter formed numerous black striæ thrown up in parallel ridges in the longitudinal diameter of the organ, though converging towards the cardia and the pylorus ; the mesenteric glands somewhat indurated and enlarged ; the ileum viewed externally, nearly as black as charcoal, but not gangrenous ; its entire mucous tissue injected, having

\* The prescribing physician in this case, is dead.

vascular arborizations ; this tissue throughout the small intestines much injected, thickened, and infiltrated ; its sub-mucous portion contained numerous ecchymoses and button-shaped coagula of blood, a line in thickness ; several follicular patches of Peyer were developed, some of which were infiltrated with black blood, other patches were denuded of the epithelium, being in the incipient stage of ulceration ; the solitary glands (Brunner's) hypertrophied ; the small intestines contained a blackish, thin blood without coagula or faecal matter ; the cæcum and ascending colon had in the sub-mucous tissue punctiform injection, (blood dottings,) the residue of the large intestine natural.

The gall-bladder full of bile, which was thin and contained innumerable branny scales and small granular masses ; liver engorged.

The urine pale ; the left kidney engorged, the renal artery of which was plugged by a fibrinous concretion.

The left femoral artery was plugged by a long, firm cylinder of fibrin, completely occluding that great vessel.

**SPONTANEOUS GANGRENE.**—1849, Feb. 19. Mrs. B. D., aged 30, recently arrived from Ireland; now dying in Tchoupitoulas street from cholera; says that three weeks ago, while at sea, she noticed a pimple on the margin of the left nostril which remained with little change until she reached the mouth of the Mississippi, when she was delivered of a living child. Soon after, she was attacked with diarrhœa, which, forty-eight hours since, assumed the form of cholera of the most violent character.

Since the choleraic symptoms appeared, the sore on the nose has run into dry gangrene or mortification, is extending, and occupies about half of the left side of the nose, being black and firm without any tumefaction or redness in the vicinity. The pain is little, not being complained of. Died, 16th at 10½ A. M.

This is but a feeble type of spontaneous gangrene which I have met with in children, occurring in the face, and always mortal. I have met with it also as a sequela of yellow fever.

**TRAUMATIC OSTITIS.**—1848, Sept. 18, 9 A. M.; air 80°. A young man, of good constitution, was, three months ago, shot in the swamp, in the rear of the Third District of New Orleans. A hunter, who, seeing through the jungle no portion of the young man's person but his leg, mistook it for an alligator, and discharged his fowling piece at the same. Five or six buck-shot penetrated the lower fourth of the leg upon its outer aspect, including the instep; at the entrances of the balls, large, round orifices conducted to deep sinuses, which discharged a dark, bloody matter. The instep, ankle and lower portion of the leg, with-

out much swelling, presented a smooth, brownish black appearance. The man was somewhat emaciated and very sallow.

Dr. Compton, his attending physician, determined to amputate below the knee.

Immediately before the amputation, his temperature was: hand,  $89^{\circ}$ ; bend of the arm,  $95^{\circ}$ . During inhalation of chloroform, which did not appear to produce complete insensibility, the bend of the arm gave in three minutes  $97\frac{1}{2}^{\circ}$ . In ten minutes after the operation, the same region gave  $95\frac{1}{2}^{\circ}$ , the pulse being extremely small, quick and unsteady.

The dissection showed extensive alterations of various tissues. In several places, blackness with putridity was seen in the course the shot had taken. The tibia was extensively fractured near its lower end, though the entire shaft was not broken transversely. The tibia, fibula, and some of the metatarsal bones in the vicinity of the injury, not fractured, were quite red, and brittle or friable. The ends of the bones, where sawed through in the amputation, were natural.

The muscular tissue, for some distance around the sinuses, was pale, inclining to a cork color; the adjacent cellular, cartilaginous and ligamentous tissues, were in several places infiltrated with, or converted into, gelatinous matter, being semi-transparent, tinged or mingled with yellow and red. The change in the bones was very marked, and extended to such as had been touched with the balls. The cancellated portions were of a blood-red color. Several balls were found completely flattened, others being disintegrated into many thin fractured laminæ imbedded in the tibia.

Sept. 19, noon. Skin pale and sallow; pulse rapid, variable, small. Hand  $103^{\circ}$ ; bend of the arm  $104^{\circ}$ . Had suffered during the night from hæmorrhage. The inter-osseous, or a branch of it, required ligation, and, consequently, a re-opening of the wound. Recovered.

[*To be continued.*]



ART. III.—*On Cholera* : By BENNET DOWLER, M. D.

The science of medicine is founded on observations and experiments. He who faithfully observes, records, and publishes medical facts, even though he may be neither able nor willing to deduce theories therefrom, puts into the hands of others, the materials for speculation, generalization, and, it may be, discovery.

In submitting to the reader the following papers on cholera, speculative opinions and theoretical reasonings will probably be rarely obtruded. Readers who demand facts, who do their own thinking, following their own judgment both in applying the rules of evidence and in drawing conclusions, will be the last to complain of rugged facts, for the reason that they are neither pressed into the service of a favorite theory of easy comprehension, nor embellished by rhetoric.

It is a grave error in reporting therapeutic, pathological and anatomical researches, to choose or select none but remarkable or extraordinary cases, because, in so doing the investigator cannot truly represent the average or specific characteristics of a malady either in its ordinary or varying relations. The principle of selection, unless it be one based on typical representation of a class, treats only of exceptions, but does not establish general rules for the common cases. It is, indeed, highly useful to appreciate the apparent exceptions, not however, as proving the general rule, agreeably to the sophistical maxim, namely, "*exceptio probat regulam*," but as the means of eliminating, to some extent, the general rules to which they themselves are subject. Perhaps all exceptions are nothing more than provisional assumptions originating in ignorance of the laws of Nature. Monstrosity itself has its laws, limits, unities, and regularities, which allow of classification, and which are found to approximate normality the more they are investigated and understood. Nevertheless, in the present state of science, it would be erroneous, to study normal anatomy, for example, through abnormal or monstrous specimens and types. The same remark applies equally to isolated cases called remarkable or extraordinary in therapeutics, pathology, and morbid anatomy.

In the present paper, it is proposed to give to a limited extent, the notes taken at the bed-side, and in the dead house, concerning cholera. A part of these only can be given in one number of this Journal. It is not, at present, intended to make any other classification than the most simple one, namely, *fatal and non-fatal cases*, giving a fraction of the black list of mortality first.

The recent, and, in many places, continuous prevalence of cholera in India, in the Cape Verde Islands, in Southern, particularly in Peninsular Europe, in Central and South America, and in sea-going vessels up-

on the great oceanic routes from continent to continent, is a significant fact, if not a prelusory warning to the dwellers in this vast Republic extending from the Atlantic to the Pacific.

The obscurity which reigns over the cause, curation, and pathological anatomy of cholera, is the very best reason why the disease should be investigated with unwearied diligence. Neither indolence nor despair is likely to achieve anything satisfactory in this behalf.

*Fatal Cases.*—The notes on the following fatal cases of cholera, as originally taken at the bed-side, were much fuller than the synopsis now given of the same indicates. It is not deemed necessary to state in each case, the existence of vomiting, purging, thirst, cramps, the non-secretion or scantiness of urine, the normal condition of the senses and intellect, etc. These, if not expressed, except in reference to some peculiarity, must generally be taken for granted.

The observations were in many cases made in the Charity Hospital, towards the middle of the day. The treatment is sometimes added, sufficiently so, to indicate the type of active medication, though many cases, having been hopeless, active measures were not deemed necessary.

1848. Dec. 18 ; 3 p. m.—J. K., sick three hours. Was costive yesterday ; worked until noon to-day ; ate apples this morning, some of which were found in his pockets ; intelligence natural ; countenance sad ; pulseless at intervals ; pulse, when perceptible, thready, irregular, 120 ; respiration incomplete, 28 ; skin cool, corrugated, dusky, inclining to blue ; clammy perspiration ; voice weak ; tongue pale, flabby, slightly tumid ; the cramps are troublesome, chiefly in the extensors of the fingers. Tongue  $90^{\circ}$  ; bend of the arm  $93\frac{1}{2}^{\circ}$ .—Died 17 hours afterwards.

On the same day I was called, at 8 p. m., to see a wood-merchant, aged 22, resident two weeks, who had discontinued business at noon ; for about four hours before I saw him, he had had copious, "milky" evacuations (as they were described) upward and downward, together with cramps in his fingers chiefly.

He did not go to bed until carried there in the evening, at which time he was found lying on the ground, in the yard, having fainted on his way to the privy. Senses natural ; eyes sunken, injected, surrounded with a dark circle ; features sharp ; mind dejected ; skin dusky, wrinkled ; nails blue ; clammy, cool, copious perspiration ; tongue doughy ; thirst ; pulse thready, variable, irregular ; respiration feeble. After having been treated with mustard plasters on the skin, and taken four pills of calomel, blue mass, quinine, piperine, and morphia, he died about midnight. Seven hours afterwards, the skin was moist ; the axilla  $92^{\circ}$  ; he entire body rigid.

An Irishman, aged 25, who went to bed in ordinary health on the night of 23d of December, was, at midnight, found in the advanced stage of cholera; ten hours after he was pulseless; the skin bluish, shrivelled, clammy; the cutaneous veins (those of the forehead excepted) collapsed; thirsty; tongue moist, flabby, pale; vomiting, purging, etc. Cramps have subsided; eyes injected, staring; pupils dilated; voice hoarse and feeble; sits up in bed as if dreading suffocation; respiration imperfect, uneasy, 60; mucous rattles; complains of pain at the heart; tongue 88°—bend of the arm 92°—axilla 96°.—Died an hour after.

A Swiss, aged 27, large, muscular, sick eleven hours; skin bluish, shrivelled; voice hoarse and small; eyes injected; vomiting, purging and cramps have ceased; pain about the heart; pulse thready, quick, at intervals absent; respiration 52, but variable and incomplete.—Tongue 89°—palm 84½°—bend of the arm 92°—axilla 96°.—Died 20 hours after.

G., aged 46.—Labored on the 29th of December as usual; had but one intestinal evacuation; at three o'clock next morning was attacked with cholera; at 11 o'clock, his voice was reduced to a mere whisper; no pain except from the cramps; eyes sunken, injected; pupils contracted; face of a dusky blue, the skin similar in hue, dry, and wrinkled; respirations 20; coughs; pulseless; tongue moist, and tumid, except at its tip; thirsty; watery gurgling in the bowels; palm 76°—bend of the arm 84°—axilla 90°—tongue 84°. Treated with sinapisms.—Died twenty-four hours after the commencement of the disease.

N. C., aged about 20: *Six hours before death*:—Senses dull, but can answer rationally; skin corrugated, clammy, mottled blue and red; epigastrium tender; eyes injected; pulse feeble, thready and irregular; respiration 60—tongue 90°—bend of the arm 90°—axilla 96°.

J. K., Irish, aged 50, resident seven years; afflicted for two months in the country, with intermittent fever. Cholera supervened six hours since; cramps; copious watery stools, whitish, but foetid; mind clear but dejected; says all he desires is an easy death; eyes injected; skin shrivelled, dusky; tongue a little tumid and white; respiration quick; pulse small, irregular; complains of pain from mustard plasters. Hand 85°—axilla 92°.—Died 8 hours after. Fifteen hours after death, abdomen concave, body much emaciated.

T. G., born in Missouri, aged 28, plasterer, resident seven weeks; emaciated; has had cholera for 24 hours; quiet; senses natural; voice weak and hoarse; skin bluish, clammy; veins collapsed; stools watery; cramps and vomiting have subsided; tongue cold and furred slightly; eyes injected and sunken; pulse small and variable. Hands 85°—bend



of the arm  $94^{\circ}$ .—Died 9 hours afterwards ; 12 hours after, the face was mottled with bluish and reddish hues.

H. B., born in Vermont, aged 28, resident three days ; 40th hour of the cholera ; senses normal ; dejected ; emaciated ; voice hoarse, weak ; coughs ; skin clammy or greasy, shrivelled ; pulseless. Palm  $86^{\circ}$ —bend of the arm  $93^{\circ}$ .—Died a few hours after.

M. G., Irish, aged 24, about 30 hours sick ; vomiting, etc., ceased—large and muscular ; intelligence impaired ; restless, turns from side to side ; sad, stupid, inclining to coma ; mucous râle ; respiration uneasy, 28, but variable ; pulse thready, 120, irregular—intervals of pulselessness ; muscular tremors and twitchings ; can swallow ; is speechless ; eyes excessively injected ; pupils contracted ; corneæ lustreless and coated with a mucous exudation ; skin everywhere of a dusky blue ; hands wrinkled ; nails blue ; collapse of the external veins ; hand  $84^{\circ}$ —bend of the arm  $89^{\circ}$ .—Died 2 hours after.

Treatment for 24 hours : Spt. camph.  $\text{ʒii}$  ; tinct. opii.  $\text{ʒii}$  ; liq. ammon.  $\text{ʒiss}$  ; a tea-spoonful every thirty minutes.

Sixteen hours after death ; body rigid ; skin as before death.

J. H., German ; aged 48, stout ; resident 5 days ; sick about 12 hours ; half of that time treated with a table spoonful of the following mixture every 30 minutes more or less : Tinct. opii.  $\text{ʒii}$  ; piperine grs. 12 ; quin. sulph.  $\text{ʒi}$  ; aquæ  $\text{ʒvi}$  ;—cups ; blisters ; sinapisms.

Slight cramps ; respirations, 36 ; pulse thready, contracted, irregular, intermitting ; skin dusky ; hands wrinkled ; inclined to sleep after 9 doses. Eyes injected ; external veins empty, collapsed. Under the tongue, and in the bend of the arm,  $92^{\circ}$ —axilla  $95^{\circ}$ .—Died 10 hours after.

F. S., Irish, aged about 30 ; extremely muscular ; sick 18 hours ; cramps, chiefly confined to the legs ; copious fluid stools and vomitings ; intelligence natural ; predicts his death ; restless ; pulse 120, small, variable, irregular ; respiration 32, irregular and panting ; collapse of the veins ; skin corrugated, clammy, dusky ; eyes injected. Bend of the arm  $91\frac{1}{2}^{\circ}$ —axilla  $95^{\circ}$ . Doses every thirty minutes, as follows : 2 grs. of opium, 5 of camphor, and 6 of capsicum. Two hours later, and six hours before death, the skin became reddish, particularly in the face.—The sublingual region  $94\frac{1}{2}^{\circ}$ —a sensation of internal heat prevailed.

J. P., born in Pennsylvania, sailor, resident 13 years, aged 62, *in articulo mortis*, (lived three hours) senses natural ; restless ; wishes for death ; stout and fleshy ; vomits ; cramps subsiding ; skin corrugated, clammy and bluish ; collapse of the veins ; voice low and feeble ; thirst intense ; pulse thready, irregular, intermittent, and, at intervals imperceptible ; unquiet respiration ; tongue tumid and whitish ; thirsty ; hands

90½°—axilla 96°—tongue 94°. Treated with opium, brandy, quinine, capsicum, piperine.

T. S., German, aged 25, resident 4 years : A few hours before death : Senses natural ; mind dejected ; restless ; cramps and purging ceased ; vomiting persists ; skin bluish, corrugated, clammy ; fingers and hands wrinkled, withered ; tongue thick, moist and of a dirty white ; a slight thready pulse occasionally perceptible ; respiration panting, imperfect, and irregular, 48 ; eyes sunken—mustard produces the usual pain ; tongue 88°—bend of the arm 88°—axilla 93½°.

P. F., Irish, aged 35, resident one year ; a few hours before death ; said he was gone ; skin clammy, corrugated, and of a dusky blue ; collapse of the exterior blood vessels ; eyes sunken, and surrounded with dark areöla ; pulseless ; restless ; thirsty ; respiration 36, but irregular and panting ; tongue 87½°—bend of the arm 87½°—axilla 95½°.

G. W., born in Massachusetts, aged 24, late a soldier in the American army in Mexico. Had suffered during the campaign from diarrhœa but had recovered. The disease returned on his arrival at New Orleans, in November, 1848, and continued to harass him for one month, when cholera supervened. In 24 hours afterwards, his voice was feeble, person emaciated ; senses regular ; skin bluish and darkish red and greatly corrugated in the hands ; thirst ; tongue pale and large ; respiration 28, feeble ; pulse 100, at intervals small, irregular, and intermitting ; tongue 90½°—bend of the arm 90½°—axilla 96½°.

Forty-eight hours after the attack : Intelligence normal ; debility ; weakness of voice ; no thirst, vomiting, or urine ; four small watery stools within 24 hours ; skin corrugated and of a dusky blue ; features sad and sharp ; eyes sunken, uninjected and surrounded with dark areölæ ; respiration quiet but small and imperfect ; pulse thready and irregular ; tongue 95°—bend of the arm 92°—axilla 98°.—Treated with brandy and other stimulants.—Died two days afterward.

P. R., Irish, aged 25 ; resident three weeks ; large and muscular ; sick 20 hours ; senses dull ; inclines to coma ; eyes a little injected, turned upward, pupils contracted ; restless ; gets out of bed ; voice weak ; skin moist, bluish, wrinkled ; fingers much corrugated, nails blue ; pressure upon the skin with the hand produces a white figure corresponding to the shape of the hand, but this is slowly replaced with the blueness again ; respiration 24 ; pulse 115, thready, and sometimes imperceptible ; tongue pale, thick, moist, 86°—bend of the arm 87°—palms 79½°—axilla 93½°.—Died next day.

W. G. R., born in Maryland, aged 21 ; sick three days ; skin blue, shrivelled, dry ; respiration irregular and stertorous, with mucous rattles ; pulse thready, quick, irregular ; vomiting, purging, and cramps

gone ; inclines to coma ; intelligence impaired ; tongue moist and coated with a dark brown fur,  $90^{\circ}$ —bend of the arm  $90^{\circ}$ —axilla  $96^{\circ}$ —Died next day.

P. N., Irish, aged 24 ; sick 16 hours ; skin blue, wrinkled ; eyes a little injected ; respiration imperfect ; pulseless ; nearly speechless ; intelligence dull ; indifferent, quiet ; tongue thick, moist, pale,  $88^{\circ}$ —palms  $80^{\circ}$ —bend of the arm  $90^{\circ}$ .—Sent to the Hospital, where, three days after, he died.

H. M., Frenchman, aged 37, resident 3 months ; mind normal ; aphonic ; skin dry, dusky, wrinkled ; tongue moist, tumid, blue ; eyes sunken and injected ; respiration 20 ; pulse thready and irregular ; cramps ; thirst ; tongue  $82\frac{1}{2}^{\circ}$ —palms  $80^{\circ}$ —bend of the arm  $85^{\circ}$ —axilla  $90^{\circ}$ —Died a few hours after.

Dec. 18th ; 2 p. m. ; air about  $76^{\circ}$  : P. K., Belgian, aged 44 ; sick three to four days ; stout and muscular ; extreme mental dejection ; senses natural ; moans incessantly ; vomiting, purging, and cramps ; respiration, 28, uneasy and irregular ; pulse 100, thready, hobbling and irregular ; skin dusky, wrinkled, and in dependent parts of a dark blue, from positional hyperæmia ; eyes somewhat sunken and injected, pupils contracted ; tongue tumid and not protrudable ; bend of the arm  $92^{\circ}$  axilla  $96^{\circ}$  At 3 p. m. ; blueness of the skin increased ; respiration, 24, irregular ; loud moanings ;—at  $3\frac{1}{2}$  p. m., died. At 4 p. m., mouth open ; jaw rigid ; corneæ dry ; axilla  $99^{\circ}$  ; at 30 minutes after death  $99\frac{1}{2}^{\circ}$ —at one hour  $100^{\circ}$  and, rising ; the tongue  $91^{\circ}$ .

The contractility of the right arm was tested by percussion thirty minutes and at one hour after death ;—at the latter period the flexions were more perfect, than previously, and at the same time the fingers of the left arm which had not been manipulated began to contract spontaneously, the thumb and index fingers were repeatedly brought together as in the act of taking snuff from a box. These contractions occurred at intervals during the second hour, that is, as long as the observer remained.

Dec. 30th : P. G., Irish, aged 27, resident 4 weeks. At 10 a. m., mind clear ; completely speechless ; indicates his wants, as drinks, by signs ; cannot protrude his tongue, or even open his mouth, yet swallows easily ; tongue tumid, pale, motionless ; eyes sunken, injected, pupils normal ; thirst intense ; skin bluish, corrugated ; respiration 44, feeble, quiet, imperfect ; pulseless ; vomiting, purging, and cramps have ceased ; abdomen slightly concave ; palm  $68^{\circ}$ —bend of the arm  $77^{\circ}$ —axilla  $88^{\circ}$ .

1 p. m. ; dying ; breathing slight, and tracheal, scarcely moving the walls of the chest ; makes signs for water which he swallows greedily ; hand  $64^{\circ}$ —bend of the arm  $79^{\circ}$ —axilla  $88^{\circ}$ —Died ; 5 minutes after,



axilla  $89^{\circ}$ —in 5 m.  $90^{\circ}$ —carried to the dead house ; stripped—laid on a stone ground floor ; 20 m. after death, bend of the arm  $82^{\circ}$ —25 m. axilla  $98^{\circ}$ —30 m.  $99^{\circ}$ —35 m. rectum  $94^{\circ}$ —40 m.  $94\frac{1}{2}^{\circ}$  and rising.—There was a tendency in the rectum to expel the thermometer. There was a regular but short oscillation of the thermometer from side to side rather slower than the arterial pulses in health, that is, the stem of the thermometer, ten inches of which was external to the rectum, vibrated from one thigh towards the other, like the pendulum of a clock. Corresponding with these oscillations, there were slight spontaneous contractions or twitchings of the muscles along the inner margins of the thighs alternating regularly from side to side in the course of the gracilis and adductor longus. These motions continued as long as the observations were continued that is, more than an hour after death. During this period muscular contractions, excited by percussion, were of the most active character in all parts of the body. The arms performed repeated flexions, pronations, etc., with increasing force. The body which was of medium size and rather lean, possessed nearly the same bluish shrivelled appearance as before death.

*Note on the spontaneous post-mortem expulsion of the thermometer from the rectum.*—Sept. 24th, 1848 : I have observed during this season, in yellow fever and other subjects, several examples not only of oscillation but of post-mortem expulsion of the thermometer where gases, etc., appeared wholly absent. Nothing but the vital action could be imagined as the cause of this movement. In these cases the expulsion was generally gradual, occupying several seconds, or minutes, and could be prevented only by an opposing mechanical or counter force.

H. P., a Swiss, large muscular and fat ; had until near the close of life the usual symptoms of cholera ; the last stage was attended with cerebral oppression. Thirty minutes after death, the body being on a stone floor, the air of the room  $78^{\circ}$ —face appeared mottled ; slight rigidity of the neck and wrists, yet the contractility was powerful for an hour, even after the joints, as the wrists and shoulders had become rigid ; yet by a little manipulation of these, the biceps and brachialis muscles acted so as to flex the arm repeatedly. The veins of the arm became distended as in health—ligation increased the distension ; venesection performed in the usual manner, was followed by a column of blood, which rising about six inches discharged a quarter of a pound. The calorific observations lasted about an hour and a quarter, each being consecutive, and lasting about 5 minutes in the order following : axilla  $104\frac{1}{2}^{\circ}$ — $105\frac{3}{4}^{\circ}$ —tongue  $98^{\circ}$ —rectum  $105^{\circ}$ — $106\frac{1}{2}^{\circ}$ — $106\frac{1}{3}^{\circ}$ — $108^{\circ}$ — $108\frac{1}{2}^{\circ}$ — $109^{\circ}$ —epigastrium  $108^{\circ}$ — $110^{\circ}$ — $110\frac{1}{2}^{\circ}$ —brain  $103^{\circ}$ —concave surface of the liver  $108^{\circ}$ —heart  $109\frac{1}{2}^{\circ}$ —brain  $102\frac{1}{2}^{\circ}$ —centre of the abdomen

108°—concave surface of the liver 109°—rectum 103°. The ebbings and flowings of the animal heat probably continued much longer after the observations ceased.

1850 ; Nov. 28, 7 P. M. ; Mr. W., born in England, aged 32, mate of the ship *Thomas Church*, resident 5 days ; attended to business until 4 P. M., to-day, when he went to bed having the usual symptoms of cholera, which he attempted to arrest by taking brandy and laudanum very freely—of the latter he took a tea-spoonful every hour, until he had taken three such doses ; is cold ; nearly pulseless, skin shrivelled, etc. ; inclines to slumber ; mind a little confused. Died in the night at 4 A. M.

In four hours after death, the body was rigid, the heat universally diffused, reaching about 105°, the air being 54°, the room about 64°.

1851, May 18, 11 A. M. ; W. C., born in Ireland, aged 35 ; resident 6 weeks taken 4 days ago with cholera or choleraic congestive fever ; intelligence impaired, yet answers without incoherency ; inclines to slumber ; has been treated for four days chiefly with opium, camphor, musk, quinine, and valerian ; eyes somewhat sunken being little injected, upturned and open when dozing ; skin dotted with petechiæ ; cheeks dusky red ; lips brownish ; feet and hands bluish ; fingers firmly semi-flexed ; tongue moist, tumid ; jaws open but slightly, being almost fixed ; vomits often, gulping occasionally ; thirsty ; no urine for 30 hours ; abdomen free from pain and distention ; purging has ceased ; cramps in his arms ; respiration, 26, noisy, heaving, rattling, stertorous, with cough ; expectorates mucosity ; right lung dull ; pulse small, intermitting during inspiration, returning during expiration. Armpit 101°—bend of the arm 97½°—palms 94½°—popliteal 95°—ankles 89½°—tongue 95°.

Died in the night.

1850 ; Nov. 2 ; 10 P. M. ; J., negro slave of the *Water Works Bank*, aged 38, born in Miss. ; resident in New Orleans 3 months ; had 6 or 7 weeks ago, two attacks of diarrhœa which yielded readily ; also remitting fever. For some weeks past he has been well, and has worked regularly. To-day he worked as usual. Had been costive two days ; eat an orange in the evening, and walking home, (the distance being about a mile) had several thin stools ; reached home after dark ; had three large watery evacuations, vomited several times, but did not think it necessary to give any notice to the white people until cramps set in violently ; saw him at 10 P. M., about three hours after the purging began ; voice feeble ; pulse thready, irregular and quick ; skin cool ; thirst ; cramps violent. Frictions ; mustard cataplasms ; pills of cal., quin., camphor, morphia.

At 2 A. M., purging and vomiting ceased since the first dose of pills ; mind clear ; no sleepiness ; pulse indistinct ; skin, tongue, etc., cold ; surface wrinkled ; thirst increased ; cramps continue. Died one hour after. Duration of the disease 10 hours.

1848 ; Jan. 6 ; 3 P. M. ; room 70° ; S., aged 30 ; boatman ; diarrhœa for two days ; cholera set in last night ; nearly voiceless ; cramps severe in legs and hands ; eyes red with injection, sunken ; skin contracted, reddish upon the face and blue upon the extremities, dry and smooth ; abdomen concave ; tongue tumid, dry, red at the tip, furred with yellow upon the dorsum, 85° ; headache ; thirst ; urinates ; pulse thready and irregular ; respiration slight, 40 ; anxious for bloodletting and a warm bath. Axilla 98° ; bend of the arm 92° ; palms 87°.

Died in the night.

1849 ; June 23, 9 A. M., J. N., seaman, ship Medomak, aged about 50, thin in flesh, was taken with diarrhœa 36 hours ago ; worked yesterday ; had many watery stools last night, and this morning, with vomiting, cramps, thirst, cool skin, small, irregular, and variable pulse ; skin dusky inclining to blue, and somewhat wrinkled. Has taken within two hours, brandy and laudanum very freely—probably threw up a considerable portion of these. I gave him about one and a half spoonfuls of strong powdered mustard, which in about 5 minutes vomited freely, bringing up much mucosity, dense and ropy. The pulse became fuller, slower and more regular ; the external veins filled up. Gave quinine, camphor and calomel.

*Non.*—Has taken 3 doses, and vomited slightly but once ; no purging ; cramps slight ; pulse small, quick, distinct ; no urination for 24 hours.

24th, morning ; had vomiting and purging last night : To take three more doses as before.

Sunset ; lies on his side asleep ; respiration slow ; pulse feeble, small and irregular ; abundance of choleraic liquid, which passed unconsciously, had run upon the deck ; skin cold, clammy, and wrinkled ; on awaking him, and removing his pantaloons, about a quart of milky liquid was found in and about them ; is thirsty ; brandy, laudanum, and iced water.

25th ; 10 A. M., Died.

1849 ; June 10, 6 P. M. ; Called to see Mrs. B., born in Germany, aged 43 or 44 ; resident 4 years ; widow having several grown children and a child 8 months old ; husband lately deceased ; is stout and active keeping a Dairy at Gretna, opposite New Orleans ; took breakfast and worked as usual in the morning ; at 11 A. M., had vomiting and



watery purgings, denied having cholera or any serious sickness or pain but had a marked chilliness.

6 P. M. ; Face dusky, skin cool and shrunken ; tongue moist and cold ; feeble voice ; eyes sunken ; long intervals of pulselessness ; cramps in the legs ; imperfect respiration ; cramps apparently in the diaphragm, stomach, and heart ; thirst ; has neither vomiting nor purging at present ; saw a stool which she had passed just before my arrival ; it was colorless more limpid than rice water being inodorous, having a little heavy membraniform epithelial shreds, with mucosity at the bottom of the liquid. Ice brandy internally ; a liniment of spt. turp., mustard, and cayenne, rubbed externally ; this produced a burning of the skin. Died at 11 P. M.

A., aged 25, born in Germany, resident 10 years, son of the woman above referred to, was taken with watery purging at 2 A. M., June 12 ; resumed his usual occupation and worked until 11 A. M., in the foundry at Gretna. Called at 2 P. M. : collapsed ; had been treated for 3 hours with sinapisms, frictions, opiates, castor oil, and some cholera nostrums. Pulse small, irregular ; sometimes imperceptible ; surface cool except on the head ; skin bluish, wrinkled ; sweats ; vomits ; purges ; cramps frequently and extensively ; tongue tumid, pale ; thirsty ; respiration hurried, imperfect. Stools and matters vomited a little tinged with yellow, but otherwise watery. A mustard emetic vomited him freely, (about a half a gallon) ; after which cal. quin., camph., and tinct. of opium, with iced brandy toddy were given.

At 5½ P. M., all his symptoms, but cramps and vomiting, were aggravated ; pulseless ; breathing imperfect and hurried ; palms 86°—feet 86½°.

Died at 7 P. M., 17 hours after the first symptoms, 8 hours after going to bed with cramps, etc., and 5 hours after the first visit.

The administration of a mustard emetic which I rarely give, was used in this case and in others, upon the supposition that there might be, as there sometimes really is, a dense mucous adhering to the coats of the stomach, which, if expelled, would, perhaps, remove a barrier which prevents the absorption of medicines. Besides, vomiting freely clears off the gastric accumulations, immediately after which, medicines will often be retained, at least for a time, though they would be rejected, if taken into a stomach full of choleraic liquid. Vomiting in this disease, whether excited artificially or spontaneously, produces a temporary relief from gastric oppression, and induces a fuller and more distinct development of the pulse.

April 3d, 1849 ; 8 A. M. ; Mrs. E., born in England, aged 37, mother of a family, of weak intellect, subject to repeated and prolonged

attacks of insanity ; now insane in a slight degree and has been so for several weeks ; she was at first violently so, but for a week past has been rather quiet, idiotic, haggard, taciturn, and dejected ; had during the last night frequent, copious milky stools, with some scybalæ ; also cramps ; vomiting, and purging have ceased ; slight cramps in the fingers, occasionally severe ones in the legs ; abdomen rigid ; but she does not complain, as is usual, of pain ; surface cool, wrinkled ; nails blue ; skin a little moist, dusky ; dark circles around the eyes ; eyes and tongue little changed ; respiration slight ; thirst ; pulseless at intervals ; sometimes the pulse is like a fine thread, being very rapid.—Sinapisms ; opiates ; quinine ; mercurials ; in pills.

Noon Pulseless ; skin blue and extremely wrinkled, and everywhere of an almost icy coldness ; tongue cold ; intelligence returning considerably ; voice faint ; slight cramps. Died at 5 P. M. Two hours after death, the fingers and thumbs contracted and extended, and twitched in an irregular but active manner ; sometimes she grasped the hand nearly as vigorously as is usual in shaking hands. The body had become warm.

**PATHOLOGICAL ANATOMY OF CHOLERA.**—1849, January 9, 1 P. M. **T. F** born in Ireland ; aged 30 ; resident two years ; mind normal ; body somewhat emaciated ; after suffering from diarrhœa for three days, was taken violently 24 hours ago with increased purging, with vomiting and cramps ; these continue ; nearly voiceless ; no urine ; tongue natural except a little fur ; thirsty ; skin blue, dry and corrugated ; pulse filiform, 100 ; respiration feeble and slight ; eyes sunken ; palm  $76^{\circ}$  ; bend of the arm  $90^{\circ}$  ; axilla  $93\frac{1}{2}^{\circ}$ . These symptoms continued until the fifth day, when reaction took place, his mind continuing clear. He passed no urine for three days before death.

January 13,  $2\frac{1}{2}$  P. M. House  $72^{\circ}$  ; minimum of the day  $64^{\circ}$ .

Dead two hours, when the examination began : axilla was  $98^{\circ}$  ; the rectum  $101^{\circ}$  for fifteen minutes ; at  $2\frac{3}{4}$  hours the centre of the thigh was  $92^{\circ}$  and falling ; at 3 hours, thigh  $93^{\circ}$  and rising ; calf of the leg (centre)  $89\frac{1}{2}^{\circ}$  ;  $3\frac{1}{4}$  hours after death, centre of the thigh  $93^{\circ}$  ; body flexible ; hæmorrhagic discoloration of the inferior portion of the scleroticæ under the conjunctiva, not crescentic ; cyanosis slightly marked in the hands and feet ; abdomen free from distention.

There was but a slight trace of contractility, which, however, was not lessened by the complete removal of every portion of the spinal marrow.

*Spinal Cord.* In dissecting this organ, about 20 oz. of blood were discharged from the cervical and dorsal vessels, being fluid and coagu-

lating; a real hæmorrhage from the muscles and cellular tissue, and not from gravity. The cord, its envelopes and adjacent tissue, natural.

*Brain* natural.

The *neck* and *chest*, mouth, pharynx, larynx, trachea, gullet, salivary, lymphatic and bronchial glands, heart and pericardium, natural; right side of the heart distended, contained a small gray fibrinous clot.

The cava and its branches distended, dilated. The lungs collapsed, not filling more than one-tenth of the chest; the pleuræ sticky to the touch.

*Abdomen.* The stomach contained a dense yellowish mucosity tinged with bile; this prevailed in the upper portion of the bowels, but became feculent, though semi-fluid, in passing to the anus. The stomach was small, contracted and rugous towards the pylorus; its mucous tissue and plicæ were somewhat dotted in spots with punctiform injection.

The jejunum contained a firm intussusception, about two inches of the invaginated portion was bloodless; the invaginating portions injected. The mucous tissue of the ileum, near the valve of the cæcum and the rectum had both punctiform and arborized injection. The pancreas, spleen, kidneys, liver, gall-bladder, common duct, the lymphatics, the mesenteric glands and the bladder, natural. The bile, about ʒijss, flowed, by making a slight pressure, into the duodenum. The urinary bladder contained about 8 oz. urine. The greater omentum was exceedingly attenuated, while the kidneys were loaded with fat.

1849, January 20th, 10 A. M. House 64°; M. W. born in Ireland, aged 39, last from Natchitoches, resident one week; died to-day of cholera, after about 30 hours' suffering. He had vomiting, purging, cramps, abdominal and spinal pain, his intellect not having been deranged; his skin was cold, lead-colored; his strength continued until near the close of life. He was treated with the hot vapor bath.

*Dissection*, one hour after death.

*Body* very large, muscular; face and extremities blue; fingers wrinkled; ball of the thumb deeply concave.

He had the most active contractility; a blow with my own hand caused complete and rapid flexions.

At five hours after death, and one hour after the post-mortem examination, contractility existed, perhaps as strong as at first, but considerable rigidity also existed; the contraction was therefore extremely slow, requiring ten or fifteen seconds to complete the flexion.

The integuments and fascia were dissected from the biceps muscle, so that the configuration of its fibres might be seen during contraction.

The shoulder was amputated. The arm contracted as before, raising the forearm to the perpendicular.

*Eyes* natural; *abdomen* undistended.



At twenty minutes after death, the rectum gave 100°; axilla 98°; at thirty minutes, rectum 100°; axilla 98°; at one hour, rectum 100 $\frac{3}{4}$ ; axilla 95°; centre of the thigh 97°; centre of the calf of the leg 88°; in five minutes the latter gave 89°, but in two hours after death 96°; at which time the liver gave 101°, the heart 101°, base of the right lung was 98°, the left 99°.

Soon after death the external jugulars, particularly the right one, began to distend; in an hour it was opened; the blood flowed in a steady current down the neck, not jetting; in a quarter of an hour about a pint was discharged. The other jugular was now opened, but it did not bleed so freely. In about half an hour both discharged about one and a fourth pounds of dark blood.

The papillæ of the tongue enlarged; fauces red; salivary glands, cervical ganglia, larynx, gullet, trachea, lungs and pleuræ, natural, excepting a few old adhesions in the latter.

Lungs collapsed to one-sixth of the cavity; subserous infiltrated spots; ecchymoses, or, rather, hæmorrhagic petechiæ upon the exterior of the heart. These bloody dots, of a dark red, varied from the minutest points up to the size of flax seed; they were found also in the subserous tissue of the kidneys, particularly in the left, which latter was engorged.

The bronchial glands had degenerated into bony or calcareous concretions, having cells filled with tuberculous matter. Omentæ, mesentery, spleen, liver, bile, (about 3ij) gall-bladder, pancreas, solar plexus, and duodenum, natural.

The pelves of the kidneys, the ureters and urinary bladder, contained a little milky or creamy liquid; the bladder was contracted, vascular, thick; the prostate was scirrhus, that is, hard, white, bloodless, hypertrophied; the right testicle was hypertrophied, its sack, or, rather, subserous tissue, injected; a hydrocele existed on this side of the scrotum, amounting to about six ounces of straw-colored serosity. The spleen natural, except in size, which exceeded the average.

The stomach contained from twenty to thirty round lumps, varying from the size of a barley grain to that of a pea, having the appearance of tallow, but softer, and swimming in turbid gray liquid; along the greater curvature and in some other places, longitudinal reddish stripes, or slight excavations of the mucous tissue, were noticed; some were three inches long by half an inch wide, but a number were irregular; the mucous membrane was gone, leaving the submucous tissue denuded, but neither softened nor even arborized.

The upper third of the jejunum was blanched, and contained a milky or starchy liquid with dense flakes of mucus or semi-coagulated albumen. The mucous tissue of the residue of this intestine was dotted

with fine punctiform injection increasing to a vivid and almost continuous red towards the ileum; the latter, viewed externally and internally, was nearly as black as charcoal; the upper portion was of a reddish black, the lower was completely gangrenous or mortified in appearance but healthy in consistence, and the same is true of the cæcum and colon. In the ileum a few elliptical patches of the agminated glands were developed; these were not black like the residue of the mucous tissue; a great many of the solitary glands were developed to a small extent, and were black or dark red. The mucous tissue was scarcely thickened, but completely discolored by black punctiform pigmentation and arborized injection. This portion of the bowels contained a variegated liquid, as if starch, milk, mucus and blood, had been imperfectly mixed, forming a compound chocolate color. The transverse and descending colon, contracted. The mucous membrane of the large intestine, particularly in the cæcum, resembled that of the ileum.

The lymphatic glands of the axilla were hypertrophied and injected moderately.

The serous membranes pasty and dry-like. The pericardium contained only a few drops of serosity.

The cava and its branches enormously distended, discharging three to four pounds of blood; the latter adhesive and dark.

Omentæ distended with blood; on puncturing some of the small venous twigs they bled; the blood having been forced out of the proximal end of the vessel, it quickly refilled against gravity, the blood flowing in the physiological direction.

There was, neither internally nor externally, any apparent positional injection.

In this, as in perhaps all other cases wherein the body was opened a few minutes after death, the vascularity natural to healthy parts was, in the most elevated as well as in the lowest, represented to a considerable extent, as may be reasonably supposed.

In this case, color alone would lead the pathologist into error. An accurate plate representing the color of the mucous membrane would be regarded as an example of complete mortification.

The blood, in twenty-four hours after the post-mort., *q. s.* having remained in a bucket, was solid and without any serosity, though a few drops of dark liquid blood was observed.

1849, January 19. J. G., born in Maine, aged 36, resident six weeks; cold, cramped, vomits, purges; thirsty; skin blue; hands corrugated.

20th. Vomiting and purging diminished; flushing has replaced blueness; heat, algidity, plumpness, corrugations; delirium, intelligence. He attempted to leave the house, became unmanageable, and was finally tied down in the evening. Soon after midnight he died.

January 21, 11 A. M. Dissection eleven hours after death.

*Body* large, muscular, fat; free from discoloration; everywhere rigid; eyes, exterior of the abdomen, the muscles and fat, natural.

Minimum of the day or sun-rise  $60^{\circ}$ ; room  $64^{\circ}$ ; rectum  $89^{\circ}$ ; centre of the thigh  $89^{\circ}$ ; centre of the calf of the leg  $70^{\circ}$ ; from a quarter to three-quarters of an hour later, the thigh  $79^{\circ}$ ; calf  $79\frac{1}{2}^{\circ}$ ; centre of the arm under the biceps  $79\frac{1}{2}^{\circ}$ ; thigh  $79^{\circ}$ ; epigastrium  $91^{\circ}$ ; thigh  $79\frac{3}{4}^{\circ}$ ; right and left sides of the chest, each,  $88^{\circ}$ ; thigh  $78\frac{1}{2}^{\circ}$ .

*Head.* The substance of the brain natural, inclining to firmness; its substance and ventricles more injected than natural; serosity natural; pia mater vascular and turgid, chiefly venous blood; arachnoid moderately opaque or milky, and increased in tenacity; lateral sinuses distended with blood.

*Fauces, etc.,* red; papillæ of the tongue enlarged; one of the amagdyla hypertrophied, black in the centre, with cells containing soft, cheesy, tuberculous matter; the periphery of the gland vascular and of a dark red color. The lower third of the œsophagus was denuded of its epithelium in longitudinal stripes.

*Abdomen.* The stomach contained, as did the entire digestive tube, fecal matter in great abundance, being generally fluid, sometimes thickish or semi-fluid. A few sanguineous points of infiltration in the submucous tissue of the stomach, chiefly in the great *cul de sac*; the duodenum colored with bile; jejunum natural; the mucous tissue of the ileum thin, greenish, studded with the solitary glands, which were white and firm; a few pale elliptical patches of the Peyerian glands were observed; the transverse and descending colon contracted; mesenteric glands, solar plexus, lymphatic glands, natural; liver firmer, tougher and larger than natural, but probably not otherwise diseased, except in color, which latter was cork-colored and marbled with milky tints; the bile was natural inclining to dark, amounting to about 3 oz., which, on pressure, passed through the common duct naturally; the kidneys covered with fat, being larger, firm, somewhat engorged, and contained in their pelves a few drops of milky choleraic liquid, as did the contracted urinary bladder. The spleen natural in size, color and cohesion: discharged, on cutting and pressing its parenchyma, a dark chocolate-colored liquid of a creamy consistence.

*Chest.* The left lung collapsed, the right adherent to the costal pleura for several square inches, much of its parenchyma being engorged, as



was the cava and its branches and the right side of the heart; the liquor pericardii natural; upon the exterior of the heart, in the subserous tissue, several hæmorrhagic or petechial dottings were found.

The pleuræ and peritoneum were adherent to the touch, and comparatively dry.

There were no coagula in this subject. The blood was adhesive or gummy, but liquid. The scalp bled copiously. Several pints of blood collected in the cavities.

1849, January 12th, noon. J. M., born in Ireland, aged 31, resident 12 years; stout, muscular; mind clear; two days since was attacked with diarrhœa; this increased; has now liquid stools, vomiting and severe cramps; abdominal pains; feeble voice; intense thirst, scanty urine; blue skin; shriveled hands; shrunken injected eyes; respiration 36; pulselessness, and coldness. Takes pills of thridace and quinine; frictions, etc.

Died in the evening. Dissection about 15 hours after death. *Exterior* rigid except the neck; muscles and adipose tissue natural.

*Brain and spinal cord*, with their envelopes, moderately injected.

*Chest.* Lungs collapsed; calcareous concretions of the bronchial glands; a few small, firm, disseminated tubercles in the lungs; the heart moderately enlarged, its right side distended with dark clots and fluid blood and with fibrinous polypi; cava and branches distended, dilated.

*Abdomen.* Stomach blanched and coated with dense mucus; considerable quantities of grayish, ropy, chylous mucus with milky fluid in the intestines; the mucous coat of the cæcum much injected and vascularized; numerous elliptical plates in the ileum from half an inch to five inches long, some pale, some red, none softened; the solitary glands, particularly of the ileum and jejunum, much enlarged, white, firm, salient, large as barley grains; mesenteric, salivary and lymphatic glands, natural; liver natural in cohesion and color, but enlarged about one-third; spleen natural but enlarged; nerves, bile ducts and bile, (the latter in large quantity,) natural; the kidneys and urinary bladder natural; the latter contained half a spoonful of milky liquid or rice water.

1849, January 12, 1 p. m. W. W., born in England, aged 38, sailor, resident two years. This is the third day of his sickness; stout, muscular; mind clear; tongue cold, white; thirst; stools watery; vomits a greenish serosity, with dark matter like coffee grounds; scanty urine; cramps, severe abdominal pain; eyes injected; pulseless; respiration 21. Treated with thridace, quinine, frictions, sinap., etc. Died in the night.

January 13th. *Dissection* about twelve hours after death.

*Exterior.* *Body* rigid; warm in the centre; muscles and fat natural; cyanosis of the skin; a little black blood in the arteries.

*Head.* Brain, spinal cord, natural.

*Nerves.* Solar plexus and nerves of the centre and limbs, natural.

*Chest.* Lungs collapsed, natural; serous membrane gummy or adhesive to the touch; blood in all the cavities of the heart; the right side distended, containing clotted and fibrinous polypi; hypertrophy of the cava and its branches.

*Abdomen, etc.* Mouth, neck and salivary glands, natural. The lower third of the œsophagus extensively denuded of its epithelium; there were extensive patches of granular spots and striæ of infiltration or injection of melanoid matter in the mucous tissue of this organ for three inches above the cardiac orifice, resembling black vomit petechiæ sometimes found in this organ in yellow fever, this punctiform and diffused charcoal-like matter being deeply imbedded, the tissue itself firm and thickened.

The stomach contained dense adherent mucosity. The bowels contained feculent mucosity, greenish and yellow; the ileum had its solitary glands hypertrophied, firm and white; the large intestine much injected and the mesenteric glands slightly so; the spleen, liver, gall-bladder, gall ducts, bile, the lymphatics, solar plexus, pancreas, ureters, bladder and kidneys, natural; both of the latter organs contained a few drops of milky rice water; the bladder contracted.

1849, January 29. House 72°. T. M., born in Ireland, aged 27; his wife gave me his history as follows: He arrived in New Orleans a week since, in good health, which continued until the afternoon of yesterday, when a violent cholera affected him suddenly, though for 24 hours previously he had diarrhœa, but this gave him no uneasiness as he did not feel sick. He continued to go about as usual. He had not labored at any kind of business since his arrival, but had indulged in stimulating drinks. His attack lasted only seventeen hours.

*Dissection* four hours after death.

*Exterior.* Body very large, muscular, fat, supple, bluish in the face, hands, neck and extremities; free from cadaveric hyperæmia; eyes injected; muscles and fat natural.

*Muscular contractility.* Strong contractility, which, at seven hours after death, three after the dissection began, and for half an hour after it was ended, still continued, often flexing the arm completely.

*Temperature.* This, taken simultaneously with two instruments, was noted at first at short intervals of two to five minutes, with occasional interruptions, beginning at four hours and ending at seven hours after death, thus: axilla  $98^{\circ}$ ,  $97\frac{3}{4}^{\circ}$ ,  $97\frac{1}{2}^{\circ}$ ; rectum  $102^{\circ}$ ; the abdomen opened, umbilical region  $103^{\circ}$ ; concave surface of the liver  $104^{\circ}$ ; right lung  $102\frac{1}{4}^{\circ}$ ; epigastrium  $103^{\circ}$ ; centre of the left thigh  $99^{\circ}$ ; centre of the calf of the leg  $91^{\circ}$ ; middle of the left arm under the biceps  $91\frac{1}{2}^{\circ}$ .

Five to six hours after death: brain  $91^{\circ}$  at the circumference, in the centre  $92^{\circ}$ ; thigh  $93\frac{1}{2}^{\circ}$ ; calf  $86^{\circ}$ ; arm  $82\frac{1}{2}^{\circ}$ ; brain  $92^{\circ}$ ,  $92\frac{1}{2}^{\circ}$ ; arm (the right,) a new puncture,  $82\frac{1}{2}^{\circ}$ ; the right thigh, (a new puncture,)  $93^{\circ}$ ; leg  $84^{\circ}$ ; brain  $92\frac{1}{2}^{\circ}$ .

The mouth, salivary glands, air-passages and lungs natural; the latter collapsed without air, without blood and but little larger than the foot of the subject.

The pericardium contained no liquid except an albuminous, adhesive, whitish exudation lining its surface, the same was attached to the serous membranes of the chest, abdomen, the pleura and peritoneum.

The heart greatly distended on the right side with both fluid and softly clotted blood; the cavas and branches enormously distended.

The liver engorged, purplish, variegated with milky hues, enlarged one-third; free from induration; gall-bladder distended with healthy bile; common duct pervious; kidneys wilted or supple, without engorgement, being rather small; their pelves contained a little creamy liquid, as did the urinary bladder, which was contracted and without urine. The pancreas were flaccid, apparently wilted, small. The spleen was not one-third the usual size in so large a man, being estimated at 3 oz.; it was so supple that it could be wrapped round a knife-handle like a rag, not having a stain of blood on cutting it open; its color brown, healthy. The solar plexus and omentæ natural, the latter being loaded with an abundance of fat.

The mucous coat of the gullet blanched, as was that of the jejunum. The stomach was excessively capacious, equal to six or eight pints; it contained about 30 oz. of liquid like rice or starch water, nearly colorless, without any sediment, mucosity, or flaky matter; also considerable inodorous air. The coats of the stomach were natural, the mucous excepted; it was everywhere bloodless, of a pearly white, quite opaque, without a particle of injection, arborescence, or discoloration, being of natural thickness, cohesion, tenacity, peeling in small strips. The duodenum was stained with bile; the upper portion of the jejunum was blanched, but not so completely white and opaque as the stomach. The ileum was vividly injected of a pink red, the color, vascularity and injection constantly increased towards the valve; the solitary glands white, salient, hard, varying from a barley grain to the size of raisin seed, being very numerous; a few Peyerian patches were developed, but they were not much discolored; their cohesion was good. The cæcum greatly enlarged; the descending colon contracted, as was the rectum. A vast quantity of rice-water liquid was found in nearly all parts of the bowels, except the contracted portions. There was a slight appearance of fæcation in the duodenum only. The liquid in the intestines was



nearly inodorous. There was scarcely any mucosity in these organs. Much of the ileum had descended and was impacted into the pelvic region. The mesentery pale, loaded with fat, its glands being enlarged considerably, with redness and vascularity.

The blood discharged, during the dissection, amounted to about 3 lbs., being black, somewhat sticky, forming soft clots, not growing red from exposure to the air. The veins of the arm became distended five hours after death.

1849, January 15, 1. P. M. J. R., born in Pennsylvania, aged 31; sailor, resident three weeks; had diarrhœa two weeks; was taken with cholera sixteen hours since; vomiting, purging and cramps; passes no urine; choleraic discharges continue; has frequent vomitings; intense thirst; pain in the head and abdomen; mind natural, but dejected; eyes injected, ecchymosed, surrounded with dark circles; a yellow fur on the tongue, which is moist; skin wrinkled; face of a dusky red color; hands blue; respiration imperfect, 20; pulse variable, thready, 112; the temporal artery much larger and stronger than the radial; voice very feeble; tongue 98°; bend of the arm 95½°; axilla 99½°.

*Treatment.* Blister over the epigastrium; morphia internally.

The temperature is comparatively high in this case of cholera.

January 16. *In statu quo.*

January 17. Delirious; vomiting ceased; febrile symptoms; the stools frequent; urinated.

*Treatment.* Carb. ammon.; brandy; spt. nit.; blisters on the thighs and abdomen, which failed to draw. Died the same day.

*Dissection,* twelve hours after death.

*Exterior.* Rigid; warm; muscles, fat and skin, natural; abdomen level.

*Spinal Cord* natural, except its cellular tissue exterior to the dura mater, which was injected slightly.

*Head.* Arachnoid tenacious, faintly opaque; pia mater vascular, turgid, chiefly venous; slight injection of both hemispheres and their ventricles. The choroid plexus loaded with blood in one ventricle; this tunic enclosed a fibro-medullary or atheromatous tumor, as large as a pea; a similar mass was found in the meshes of the pia mater over the crura cerebri.

The cerebellum slightly softened.

*Mouth and Neck.* The tongue furred; pharynx, larynx, trachea and gullet, natural.

*Chest.* Lungs natural, collapsed, not filling one-fifth of the chest; adhesion of the base of the left lung to the diaphragm; pleuræ natural, adhering to the hand by means of a viscous exudation; no effusion. The

right side of the heart much distended with viscid black clots; the heart large, flaccid, rather thin; liquor pericardii about ʒiij, straw-colored; on boiling it for a second or two, it become milky, opaque, flocculent, forming a white adhesive mass at the bottom; carb. pot. was tried on another portion not boiled, but no effervescence took place; litmus gave a faint red.

*Abdomen.* Stomach: moderate development of the follicular glands near the pylorus; stellated, punctuated and arborized injection of the submucous tissue of the stomach in patches; the greater portion of this tissue pale; duodenum and jejunum natural; these, as well as the stomach, loaded with a liquid varying in appearance from a thin solution of starch to cream; the ileum collapsed, inelastic, doughy, contracted, empty, roseate externally in the subserous tissue. The lower third of the submucous tissue of this intestine vividly red, vascular, turgescient, with hypertrophy of the solitary glands near the valve, to a small extent; the cæcum injected, loaded with a milky liquid; the ascending and transverse arch of the colon contracted into a cord; the mucous tissue of its lower end, in some places, injected, in others it was thin or gone, leaving the muscular coat pale. Liver natural, very large; bile abundant, viscid, forced with difficulty through the common duct. Urinary bladder flaccid, congested, nearly as large as the palm, contained a few drops of creamy liquid. Kidneys and ureters, pancreas and mesentery, natural; cava and branches full, dilated; arteries collapsed. Spleen adherent to the peritoneum, enlarged two or three times, pultaceous, contained a dark mulberry or rather logwood-colored liquid of a creamy consistence; except the large vessels and some cellular septa, the whole mass was broken down into a semi-liquid consistence.

In twenty-four hours after dissection, a portion of the liquor pericardii, which had been brought to the boiling point, had a sweetish smell and resembled cream or milk and soft flocculi of coagulated albumen.

Another portion, of about one ounce, unboiled, retained its original straw-color without having lost its transparency; it had deposited in the bottom of the vessel an albumino-mucous stratum.

The glandulæ solitariae of the lower end of the ileum were microscopically examined. In this specimen, these glands, which were easily flattened down and disintegrated, appeared upon, or were distributed among the capillary vessels, like fruit on the leafless branches of a tree, being sack-like rather than parenchymatous in structure.

The mucous tissue had its capillary vessels finely injected, displaying to the naked eye beautiful inosculating loops extending to the side opposite the mesentery.

January 24. Liquor pericardii, on the 9th day, turbid, of a cider color; whitish sediment; putrid odor; not changing litmus paper.

January 28. An oily or fatty pellicle has formed on the surface; a heavy lard colored deposit in the bottom. The liquid is turbid, opaque, and of a cider hue.

[To be continued.]

ART. IV.—*Treatment of Yellow Fever. Dr. Dufour's Mode.* Translated from the French Manuscript, for the *New Orleans Medical and Surgical Journal*: By J. P. BARBOT, Apothecary.

[A few years ago, my friend Mr. Barbot, had the kindness to present me a Manuscript Memoir in French having for its title, "*Traitement de la Fièvre Jaune: Méthode du Docteur Dufour*," to which was appended the following Memorandum concerning this Memoir :

"Copied from the Manuscript in the hand-writing of the late Doctor Dufour, now in the possession of Joseph LeCarpentier, Esq., of this city.

Y. NOEL.

New Orleans, August 23d, 1843.

About the close of January, 1857, I returned the above mentioned Manuscript to Mr. Barbot, requesting him to translate it. He promptly sent me the following translation. The fidelity and facility with which this young gentleman translates the modern languages, in connection with his obliging disposition, warrant the Editor of this Journal, in promising its readers, further contributions from the same source.

The importance of this Memoir, whatever may be its therapeutic value, is enhanced as a document, by the fact that it belongs to an epoch, which, though comparatively recent, produced no complete historical accounts of the great epidemics which prevailed in New Orleans. Its medical men passed away having left but few records of their observations and experiences. The Archives of Paris, and perhaps those of several other capitals in Europe, would afford data for a more complete documentary history, in this regard, than New Orleans itself.

EDITOR N. O. MED. & SURG. JOUR.]

THERE is no disease in which the treatment of physicians has varied more than in Yellow Fever. So different are the forms assumed by this disease that each person attacked by it seems to exhibit symptoms peculiar to himself. However, if physicians could convince themselves of the manner in which the principles of this disease act on the organs



of digestion, and the accidents resulting therefrom, they would clearly see that the indication would always be the same, no matter what the form assumed by the disease may be. This indication consists in attacking the disease at its source, and destroying it wherever its effects are felt. No circumstance prevents us from acting, not even the appearance of the *catamenia*, which are almost always symptomatic.

Besides, there is no disease which requires more care and watching on the part of the nurse and of the physician himself than this; he must succor the patient at every hour of the day and night, and whenever the unfavorable symptoms augment, see to the immediate administration of *enemata*, half-baths, frictions over the body with vinegar, and of greater or lesser doses of the saline mixture, etc. These methods will necessarily procure an abatement of the symptoms and the disease will follow a milder course.

In order to facilitate the comprehension of my method, I will give further on the *formule* of the different remedies employed by me to fulfil the several indications, which consist in keeping up permanent evacuations and the solids in a state as relaxed as possible, and in treating the symptoms. All these means are often employed simultaneously.

If called in at the outset of the disease, it will be necessary to give at first, several cup-fulls of chamomile or orange-leaf tea, to assist the stomach in freeing itself of the *ingesta* of the same or of the previous day; then try to subdue the irritation by giving chicken or veal-tea to to which a little barley and *sal. nitré* have been added,—lemonade, foot-baths, *enemata* and warm half-baths.

It sometimes happens that on the second day, the condition of the mouth indicates a bilious disposition, a gastric embarrassment, the tongue is whitish in the centre or towards its base, and there is a bad or bitter taste in the mouth; in that case add to the saline mixture two grains of tartar emetic to free the stomach of this overload of this *saburra*, or this bile. But it oftener happens that this indication does not obtain, the tongue remaining in the normal state, though somewhat redder and more pointed; in which case give the simple saline mixture. This mixture almost always produces vomiting of bile, often of a porraceous kind, though it invariably purges.

After the mixture give the laxative drink; a cup-full every three or four hours, as also some veal or chicken tea and some other drinks rendered pleasant to the patient by sweetening them with syrup of orange flower, or of lemon. At night give two *enemata* of *cassia fistula*, a half-bath, and an emollient cataplasm, or fomentations with flax seed on the abdomen; to be kept up permanently. You may give through the night an emulsion containing some ether and nitre.

On the morning of the third day begin by giving two *enemata* of *cas-sia fistula*, a half-bath, rubbing the patient's body with vinegar ; continue the saline mixture, the laxative drink, etc., as on the second day.

On the fourth day follow the same treatment exactly as on the third, unless the patient be considerably better. At this time, if the remedies have operated well, it is not uncommon to find the disease decreased or aborted. In more than one hundred cases, more than three-fourths have terminated favorably on the seventh day. But it sometimes happens that in spite of all the means employed the disease increases, and that, when you least expect it, the bad symptoms begin to develop themselves. Then, insist upon giving *enemata* and baths, luke-warm only.—Baths are so important and useful in the treatment of this disease that you must almost drown your patient in them. It is generally in these baths that the flow of urine returns, and it is while in them that you can administer some of the remedies, because the bath greatly subdues gastric irritation.

You must endeavor to make the patient take broken doses of the saline mixture and give him constantly the laxative drink. Try to ease the pain in the pit of the stomach by oily embrocations, with the addition of some ether and laudanum, or by the application of pledgets of linen dipped in a strong solution of opium. Some of these latter can also be freely applied to the head and back, to ease the pains there.—Give some of the antispasmodic mixture, or of the *looch gommeux calmant*, according to the symptoms, or a pill of one grain of extract of opium, every four hours.

It is quite common to see all the symptoms disappear if these means be tried early and be persisted in. Later, when the secretory and vascular system will be killed, there will be no remedy. Bile and urine not being secreted any more, the blood stagnates in the vessels ; it exudes through the skin, it escapes by all the *via* and the patient dies a wretched death.

When these dangers will have ceased, when the secretions will have resumed their natural course, give some of the tonic mixture or some cup-fulls of infusion of peruvian bark, good wine, and you may then begin to permit the taking of light food. The patient will soon be convalescent.

*Formula* of the remedies used for the treatment of Yellow Fever :  
Purgative Saline Mixture.—Glauber Salt, one ounce ;

Cream of tartar, half an ounce ;

Saltpetre, one drachm ;

Acetate of potassa, half a drachm ;

dissolve in a pound and a half of boiling water. Dose : one-third of

the above, or a tumbler-full every hour, or in smaller doses at shorter intervals if the irritation of the stomach be too great. Shake the mixture well at each exhibition of the dose. It is given at all hours of the day and every day at the outset of the disease.

**Laxative Drink.**—Cassia fistula, four ounces ;

Cream of tartar, half an ounce ;

Saltpetre, two drachms ;

pour two pints of boiling water upon the above, stir well, and when nearly cold, strain. Dose : half a tumbler-full every 3 or 4 hours, night and day.

**Soothing Liniment.**—Sweet oil, four ounces ;

Camphor, (dissolved in the oil) half a drachm ;

Laudanum, three drachms ;

Sulphuric ether, one drachm.

Mix. Rub the above over the epigastrium and abdomen twice or thrice a day.

**Narcotic Infusion.**—Opium, three drachms ;

dissolve in two pints of boiling water. Dip pledgets in this infusion and apply them over the pit of the stomach, the head and the back.

**Anti-Spasmodic Mixture.**—Decoction of valerian, five ounces ;

Orange flower water, two ounces ;

Sweet spirits of nitre, one drachm ;

Ether, thirty drops ;

Laudanum, twenty drops ;

Syrup of orange flower, one ounce.

Mix. Dose.—A table-spoonful every hour.

“Looch gommeux calmant.”—Syrup of gum arabic, two ounces ;

Syrup maidenhair, two ounces ;

Orange flower water, one ounce ;

Paregoric, two drachms.

Dose. A table-spoonful. To soothe great irritation of the stomach or lungs.

**Tonic Mixture.**—Strong infusion of chamomile, five ounces ;

Orange flower water, two ounces ;

Extract of cinchona, two drachms ;

Syrup of maidenhair, one ounce.

M. F. M. Dose. A table-spoonful every two hours.

The *prognosis* of this disease is almost always unfavorable ; particularly in early youth or as the patient approaches old age. It is almost invariably fatal to pregnant women.

Black dysenteric stools, suppression of urine, the sudden disappearance of all the apparently bad symptoms and the statement by the pa-



tient himself that he is nearly cured, are fatal signs ; even when the patient retains his muscular strength. *Icterus*, *petechiæ*, spots of *ecchymosis* which mottle the body like marble; hiccough, vomiting of green or black matter ; hæmorrhages, delirium, *subsultus tendinum* are less unfavorable signs. I have cured a great number of patients who had, in a measure, all these symptoms united, being in the incipient state, it is true, when their disease was always arrested by my method.

One of my nephews, recently landed from Europe, 19 years of age, tall, slender and of a sanguine temperament, was attacked by the fever in August, 1820. He was seized suddenly about 8 or 9 o'clock, A. M., with violent head-ache, pains in the back, vomiting of the food taken the day before, though he had rested well at night. He vomited every drink that he took ; his face became flushed ; the fever increased ; he felt a sense of weakness or rather of pain in the epigastric region ; he began to vomit bilious matter ; he became anxious, uneasy about his condition ; he wept.

On the second day ; patient had not slept at all the night previous ; all the symptoms increasing.

On the third day ; had passed a bad night ; stomach more irritable ; patient is indifferent about his condition ; the fever seems to be abating. Tongue redder ; not the slightest trace of *saburra*, although there is vomiting of bilious matter ; belly flat and very slightly sensible ; he vomited everything.

Fourth day ; no sleep ; pulse lower than in the normal condition ; *petechiæ* on the fore-arms and chest ; vomiting of greenish matter. Patient is pale having yellowish streaks, more marked along the sides of the neck, complains of no pain nor of anything but weakness.

In the afternoon he passed a black bloody and glairy stool.

Fifth day. Restless night ; patient answers my questions half unconsciously ; delirium is beginning ; there is *subsultus tendinum* ; spasmodic motions and hiccough ; had no more stools ; urine is suppressed ; matter vomited up contained blackish flakes, and was so acrid that it had corroded the patient's throat and palate ; tongue redder, with exudation of drops of blood along its edges ; the exudation also occurred from the palate and gums ; so that they all seemed, so to speak, to sweat blood. It was at this period which was the beginning of the third stage, that the progress of the disease was suddenly arrested by a sudden relaxation of all the sphincters, in consequence of a fainting fit produced by a nearly cold half-bath, in which I forced the patient to remain till he fainted, having had a servant to hold him therein until then, as will be seen hereafter.

**TREATMENT.**—On the first day I ordered him several cup-fulls of orange leaf tea to assist the stomach in liberating itself from the food taken the day previous. I ordered for him, chicken-tea with the addition of a little barley and lettuce and a pinch of saltpetre ; some lemonade to be drank alternatively, to his taste ; emollient clysters ; foot-baths, half-baths and frictions with vinegar all over the body.

Second day. Early in the morning ; two clysters of *cassia fistula*, a half-bath, and immediately afterwards the saline mixture to be given in three doses ; one every hour, assisted afterwards by the laxative drink ; chicken-tea with nitre, emollient poultice over abdomen. At night two injections of *cassia fist. la* ; a half-bath, frictions with vinegar ; anti-spasmodic mixture for the night.

Treatment on the third day. Same as on second ; stomach more irritable ; ordered liniment of camphorated oil and laudanum to be rubbed on, and emollient cataplasms applied to abdomen, to be constantly renewed.

On the fourth day, yielding to the advice of my *confrères*, I gave him some tincture of coffee\* with lemon juice ; he took two doses, then refused to take any more of it or of anything else. The irritation of stomach became intense ; the formidable symptoms began to be developed. I ordered nothing to be given but cooling drinks, the anti-spasmodic mixture, *enemata*, emollient cataplasms and frictions with the camphorated oil and laudanum liniment.

On the fifth day all the symptoms of yellow fever were developed. The patient was in a critical state. Ordered two clysters of *cassia fistula* which had no effect. I then ordered him to be placed in a half-bath of almost cold water, and to be supported therein under the arm-pits by a servant. I endeavored to make him take some medicine while in the bath. I kept him in the bath till he fainted. On raising him, the sphincters relaxed and the contents of the bowels and bladder escaped as if they had been poured out of a pot. I set him on a chair, covered him with a blanket, and got the servant to hold him up but still with his feet in the bath.

When he came to, I had him rubbed all over with vinegar, then put him to bed, and gave him some good wine sweetened with syrup of orange flowers. Patient now felt singularly relieved ; his functions were restored and the medicines operated favorably. Continued the injections.

Sixth day. Gave a strong infusion of cinchona mixed with a decoction of chamomile flowers ; wine, etc. Gradually the symptoms disap-

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The late Dr. Lambert, during the epidemic of 1820, treated his yellow fever patients with repeated doses of coffee and opium.

ED. N. O. MED. & SURG. JOUR.

peared ; his strength returned ; could rise on the ninth day and convalesced soon after.

A young man, about 25 years old, a joiner, of a bilious temperament, was attacked in September. A physician who was said to possess a specific cure for yellow fever, was sent for ; he advised the patient to move to his house to be treated, saying that if he did not do so, he would be dead in four days. A second physician was sent for, who said there was no hope for the patient, and advised his removal to the hospital. This patient would not go to bed, but, anxious about himself, and frightened by what these two physicians had told him, he fell down in a fainting fit. It was at this time that one of his friends called me in. It was at 8 o'clock, P. M., on the day of the attack. Patient had recovered from his fainting fit but still had not gone to bed. He told me himself what the other two physicians had told him. I did my best to console him and recover his spirits, holding out to him the hope that I would cure him. Ordered immediately half-baths, injections, and orange leaf tea to check his vomiting.

On the second day, had not rested well the night before, having been very anxious and uneasy. Ordered two *enemata* of *cassia fistula*, a half-bath, the saline mixture at once, to be aided in its operation by the laxative drink ; some veal-tea and cataplasms to abdomen.

Afternoon. Remedies have operated well ; there has been vomiting of bilious matter and the patient is easier. Ordered two clysters of *cassia fistula*, and a half-bath for the evening. On leaving the patient's house, I met his friend in company with a fourth physician. I saw at once that I would have to give up my patient to him because his treatment differed from mine. I did so, though he pressed me to see the patient in connection with him. The remedies ordered by me were continued till the next day, when everything was changed. On the third day he was ordered tincture of coffee with lemon juice, together with a strong infusion and *enemata* of cinchona ; when the irritability of the stomach became intense and everything was rejected. Spite of this, these remedies were persevered in until the next day (the fourth) at noon. The patient had become so much worse, that the physician said there was no more hope for him, that nothing more could be done, and that he would not call to see him any more. I remarked to him that he should not give up his patient in this way ; that as long as there was life there was hope ; he refused to return any more. In this case, said I, I will take the patient in hand myself. I immediately ordered that all the remedies he had prescribed should be discontinued. Administered injections of *cassia fistula*, and a milk-warm bath in which I kept him



as long as possible. I must remark that all the evacuations had ceased during the night ; there was suppression of urine, black vomit, a very fatiguing hiccough, icterus all over the body, severe epigastric pain ; nothing passed through him. Head-ache was very severe, and the pulse lower than in the normal state. The patient was in an inconceivably agitated state, walking mechanically across the room, and moving from one bed to another. After leaving the bath, I had him washed with cold vinegar. I endeavored to make him take some of the laxative drink ; I ordered an anti-spasmodic mixture with laudanum ; applied *compresses* dipped in a solution of opium over the epigastrium, back and head ; cataplasms to the abdomen ; and ordered enemata and baths three times a day.

The next day, (the fifth) patient had urinated, the matter vomited was not so black, but the other symptoms still persisted ; the hiccough fatigued him considerably. Continued same treatment, though I ordered the baths to be nearly cold. Patient was so much easier while in the bath, that in his extreme agitation he would of his own accord place himself in the water up to his throat and remain in it for hours. It was only while he was in the bath that we could get him to take anything. He took these baths night and day.

On the sixth day the vomiting had ceased but the stomach was still very irritable.

On the seventh day he retained cold water with a little white wine, and began to take a little rice and milk.

On the eighth day, everything progressed favorably, and his mind became clear. He remembered nothing that had occurred on the preceding days. He had all along retained his muscular strength, since he could move from one bed to another, and had, unassisted plunged into the bath at every moment, though he had two nurses. His strength was returning ; jaundice still continued, and the hiccough still annoyed him considerably ; it troubled him even when asleep and did not leave him entirely until after he had been nearly cured. The yellowness of the skin did not disappear till after his perfect restoration to health, which happened on the twentieth day.

Here is a case of this disease which evidently has been cured only by the frequent administration of injections of *cassia fistula*, the use of baths, the topical application of opiates to the painful parts, and cataplasms to the abdomen, since the patient's stomach could not retain anything given by the mouth. He used to say himself, that his body was divided into two parts and that nothing passed through the lower part.

Relapses are rare in yellow fever ; when they do occur, the character of the fever is not the same as it had been in the first attack.

M. M., a blacksmith, who had been in this country seven years, was attacked by fever in August. He passed through all the formidable symptoms of so intense a degree, that they persisted during several days, and yielded at last only to repeated baths, topical applications of opium, etc., etc. Hiccough lasted during convalescence. A blackish yellow tinge of the skin continued throughout. Patient was beginning to get up and take food, when he relapsed. On this latter occasion, the fever assumed an adynamic character, the coloration of the skin disappeared gradually, while the disease was becoming more severe. He had constantly violent head-ache ; tongue furred and red along its edges, afterwards becoming black and dry ; a black tartar covered his teeth and glued his lips together. The smallest amount of a tonic drink produced considerable visceral irritation ; his fever increased and his tongue became red along the edges, but still black in the centre. I was obliged to return to the use of refrigerating drinks rendered laxative by the addition of a little *cassia fistula* or cream of tartar, sometimes with a grain of tartar emetic, anti-spasmodic mixtures containing camphor and nitre ; emollient cataplasms to abdomen, etc.

The character of the disease did not take a favorable change before the fortieth day. Convalescence lasted nearly two months, but the patient eventually got entirely well.

The epidemic of 1820 was very generally felt, and the fever being of a more contagious nature than that of the preceding years, since many of the natives\* of the soil were attacked, especially among young people. I was called in to several of the latter, and I know that two persons died on the same day and in the same house, a brother and sister. I was called in consultation upon the latter a few hours before her death, they had both been attacked on the same day. The symptoms in both were very mild ; and affected particularly the secretory, hepatic, and urinary systems. These patients died together between the seventh and eighth day, with their minds perfectly clear and indifferent about their situation.

From the principle that I think I have recognised in this disease, I think it should be better denominated "*Bilioso-gastro-intestinal Typhus*." Experience shows that all the accidents or symptoms which supervene in this cruel disease, are produced by the degree of acrimony which the humors contract by their sojourn or stagnation in their reservoirs.

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\* Dr. Chabert, a physician of New Orleans, maintains that the Creoles never take the yellow fever. (*Friend of the Laws*, Dec. 23d, 1820.)

**ART. V.—*Post-mortem Examinations in the Yellow Fever of Natchez.***  
By SAMUEL A. CARTWRIGHT, M. D.

[DEAR DOCTOR:—Among my old notes, I find the observation recorded that intussusception was very common in yellow fever.

I herewith hand you the original notes of twenty cases of yellow fever examined by me after death. Foot of page 7, and top of page 8, I mention a case of jejunum, ileum, etc., puffed up for five inches or so, with wind. These bowels themselves healthy. This is very curious, and may throw some light on the cause of intussusception. Page 14, intussusception in four places. Page 26, in five places. Page 44, moving the bowels caused intussusception. Intussusception, page 39. At page 30, you will see what I call inflammation. Case three, page 4, no morbid appearances sufficient to account for death. This case is peculiar, as the bladder was greatly distended with urine.

These examinations were all made, or nearly all, as soon as the breath was out of the patient. I had an idea that organic changes quickly took place after death, and I wanted to see how things were at the time death occurred, and thought the gastric juice might act chemically on the stomach of the cadaver, and cause it to assume the appearances of inflammation some hours after death.

The capillarity of the tissues of the central organs was in activity when I made the examinations. May not the opening of the cavity have caused infiltration of vital blood coagulating and then liquefying and thereby accounting for the appearances of inflammation I met with in the tissues in and about the root of the cœliac artery and the tissues enveloping the ganglions and plexuses? I may have mistaken the capillary life for inflammation. I had no hydrant, but washing and a little rubbing did not remove the redness. Hence, I concluded it was inflammation. When the redness disappeared quickly under ablution, I called it congestion.

But to come back to the question, why did not washing and rubbing remove the blood out of the membranes about the root of the cœliac artery and on the surface of the iliacus and psoas muscles as it did in similar injected tissues at the periphery of the body? Was it because organic life had ceased in the latter, and was still in existence in the former, when the washing was performed? Was this persistency of life in the tissues enveloping the ganglionic system of nerves a pathological or physiological phenomenon? They prove that the blood circulates after death in the central tissues.

I went with you to the Hospital in 1853, to look for these morbid appearances that I thought I saw in the Natchez yellow fever in 1823. Unfortunately our examinations were brought to an early close by your fall-



ng into the hands of the Thugs, as we call them now. The cases we examined were *old* cases. The cadavera stiff and cold, and we did not find the morbid appearances that I saw in 1823. Perhaps it was owing to capillary action having ceased before we began the post obit researches. But I took some ganglions and sympathetic nerves to Riddell, taken from yellow fever subjects, and subjected them to the microscope. But here both of us, not knowing the natural appearances under an 800 power, we could not tell much about it. However, an old woman we examined, who died of yellow fever, furnished the microscope with a semi-lunar ganglion that Riddell felt pretty certain was in a pathological and not a physiological condition.

Some persons, looking for the appearances about the *cœliaca* and the membranes investing the ganglions and plexuses, and not finding them, have done me the injustice of supposing that the whole matter was made-up assertions, or mere closet speculation, or alleged facts to support some pre-conceived theory. But, my dear doctor, the old paper I now put into your hands is sufficient to vindicate me from such disreputable suppositions. This old copy of cases, you will see, deals altogether in facts, or what I supposed to be such. There is no theory in it, but the mere statement of what I saw on examining yellow fever subjects immediately after the extinction of animal life, while organic life was still lingering and very active in the central tissues. These old notes, written more than a third of a century ago, bear evidence on their face that they were made in good faith.

At page 45, I state that the morbid appearances in the ganglionic system were not so evident in the yellow fever of 1825 as in that of 1823, the disease being milder. If other observers have not witnessed the same appearances, it may be owing to their not looking for them within a few minutes after the patient expired; or they may occur in some yellow fevers and not in all; or in some short, rapid cases and not in the lingering ones. Post-mortem contractility under percussion is not witnessed in all cases, and it would be very unjust to deny that you had witnessed it, because others might fail in their attempts to produce it. After all, these appearances, that I took for inflammation, may have been nothing more than post-mortem contractility in the central tissues. I mention a case where intussusceptions took place on moving or touching the bowels. What was that but post-mortem contractility? The appearances I saw and called inflammation, might perhaps have been better designated as post-mortem organic contractility, to distinguish it from the post-mortem contractility that you developed in the life of relation by percussion.

There is a case recorded in these old notes, where the patient gained great strength, and continued to exercise his muscles until he fell down dead. In this case, the skin and muscles were almost as easily pierced with a needle's eye as with the point, so soft and yielding were the tissues that a blunt instrument pierced them with the greatest facility.

The coagulable lymph, so often found in the heart, of the size and firmness of oysters, (see p. 19 for description,) so soon after death, convinced me that they formed before death, as I made my examinations too soon for them to have had time to form afterwards.

The most of these cases were made and recorded in 1823, and a few in 1825. My first essay on the yellow fever of 1823 was not published until 1826.

If you were to generalize the facts recorded in some one or more of your twenty or thirty volumes, you would only do, on a large scale, what I did on a small—the facts, in both cases, preceding and being independent of the subsequent generalizations. Thus, at page 45, I state the fact of the capsulæ renales being diseased, and in many of my cases a good deal of disease seemed to be located in that quarter. The disease of those capsules is just beginning to attract attention. Perhaps in another third of a century the ganglionic system of nerves may be searched for morbid appearances and my observations verified.

SAMUEL A. CARTWRIGHT.

New Orleans, February, 1857.

To Dr. B. Dowler.

Soon after article II on Pathological Anatomy had been printed in the present number of the Journal, I, having met with Dr. Cartwright in some consultation cases, mentioned that I had referred to some published cases of his in which he had met intussusception in yellow fever cadavera; the doctor thereupon was kind enough to put the above note and the following important paper in my hands.

Although a part of this paper was published in a work long since discontinued, yet the interest which attaches to researches so laborious, honorable and useful, is enduring.

This venerable ms., stained with black vomit, has every appearance indicative of the antiquity claimed for it, being, as an original record, remarkably free from the usual alterations incidental to mere revision touching verbal corrections, punctuation, etc.

It would be uncharitable to suppose that posterity will be either thankless or forgetful in regard to a contribution illustrative of the earliest yellow fever epidemics upon the banks of the Mississippi, in the latitude of Natchez.

Theory may supplant theory, school, school; but facts do not thus pass away into oblivion.

It is not the man who has practised medicine the most extensively and has obtained thereby most wealth, but he who transmits to his successors the rich stores of his experience, observation and thoughts in the art of healing, that deserves to be called philanthropist and philosopher.—ED. N. O. MED. AND SURG. JOUR.]

POST-MORTEM EXAMINATIONS *in the Yellow Fever of Natchez*.—Case 1st. September 10th, 1823. Wm. C. Brown, brought into the hospital on the fourth day of his disease. Died on the fifth with black vomit; had taken no medicine until the last day of his disease, then only mild purgatives, jalap, aloes, cal.

On opening the abdomen, the omentum was somewhat thickened and inflamed; the cardiac orifice of the stomach showed no marks of disease except its peritoneal covering, which showed slight marks of inflammation. The muscular coat of the stomach throughout showed no marks of disease. Towards the pyloric orifice of the stomach the mucous membrane began to be inflamed. But the duodenum, throughout its whole course, showed the strongest marks of disease; in many parts it was completely sphacelated, and would scarcely bear its own weight; the whole of its coats showed evident marks of inflammation and gangrene, and was filled with the black vomit, which was also found in the stomach. The jejunum was nearly empty, and showed little marks of disease. The ileum was filled with a greyish brown matter; its vessels were engorged, but showed no signs of active inflammation. The colon looked healthy, except an engorgement of its vessels. The spleen was enlarged and engorged with blood; the liver was much enlarged and of a singular green appearance. The gall-bladder was filled with a matter as black as tar; on taking the matter in my hands and pouring water on my hand, the hand was left of a bottle-green color. The vena porta, on cutting into the substance of the liver, was found turgid with blood. All the great vessels of the abdomen, both arteries and veins, were turgid with blood, and, on being cut into, bled freely.

Although the patient had been dead several hours and was cold and stiff, yet the viscera, both of the abdomen and thorax, seemed to be as warm as in the living subject. The smell was not disagreeable until the intestines were opened, and then only slightly so. The heat was, therefore, from vitality and not from chemical decomposition.

No particular diseased appearances were seen on opening the thorax. (Examination alone.) Diseased parts showed to J. C. Burrus and Mr. Denny.



**Case 2d.** September 12th. Niram Biggalow, brought into the hospital, on the seventh day of his disease, with hæmorrhage from the mouth and gums; had taken no medicine of consequence before he came in, and could take nothing afterwards except injections, gargles, etc.

He was examined some hours after death, in the presence of Dr. Tooley. The viscera were warm as in case the first. The stomach about the pyloric orifice was slightly inflamed in its mucous membrane; the duodenum, throughout its whole course, was much inflamed, and had two or three very small holes in it produced by mortification.

The liver was at least one-fourth larger than natural; so was the spleen; the first viscus was of a green color, turgid with blood, the last showed marks of engorgement. The gall-bladder was of its natural color and filled with bile, but not black as in the former case. There was an extensive and intimate adhesion between the pancreas and duodenum. The stomach was filled with a black matter, as also the duodenum; the matter was of the same appearance as that which the patient vomited up, called the black vomit. The colon was filled with a black matter, but very different from that contained in the duodenum and stomach. The matter was thick, and of the same appearance as that which is evacuated in fevers by cathartics when they operate well, whereas the contents of the stomach and duodenum had the coffee ground appearance and were much thinner.

This man, when brought into the Hospital, had hæmorrhage from his gums and mouth and nose, which never stopped.

**Case 3d.** September 13th. Mr. H. was brought in the Hospital on the — day of his disease. Had been attended by Dr. G. I was informed that his attack was a very mild one. Had no hæmorrhage from the gums. Was remarkably yellow.

Dr. Gustin was present at the examination. The stomach was not diseased in any of its coats except about the pylorus, which showed slight marks of inflammation in its mucous coat. The duodenum was inflamed in its mucous and peritoneal coverings; it was not in a state of gangrene and the inflammation was far less than in cases the first and second. The liver was very little diseased, but somewhat larger than natural; it was not of such a green color as in the preceding cases. The gall-bladder was of a natural appearance and filled with a green bile. The kidneys showed little marks of disease. The bladder was greatly distended with urine.

The morbid appearances in this subject were very slight, when compared to the two preceding cases.

**Case 4th.** September 13th. Mary Bailey; had had an attack of yellow fever; was in the Hospital for treatment; was discharged saliva-

ted; returned on the eighth; her mouth was swelled up from mercury; hæmorrhage from the gums and mouth coming on was the cause of her returning. Gargles, laxatives and tonics were used.

Died at 1 o'clock, on the 13th, with debility from hæmorrhage.

She was examined at 3 o'clock in the presence of Drs. Gustin and Mould.

I found the omentum inflamed. The stomach much distended, and presented itself in full view on opening the abdomen, whereas in the three preceding cases, the stomach was nearly empty and receded from the sight, being sunk deep in the left hypochondrium. The stomach showed no marks of disease in any of its coats, which were firm and strong; it was filled with what the subject had been drinking before death, which was chiefly water. The duodenum showed not the least sign of inflammation and no turgidity of its blood-vessels, yet was evidently mortified, as it tore on dissecting from it the mesentery, and could easily be pierced through with the fingers and torn in any direction, and on taking hold of the duodenum (after the stomach had been cut at the cardiac orifice and taken out of the abdomen) and attempting to raise the stomach by the duodenum, the duodenum tore in half. The villi of the mucous coat of the duodenum were scarcely perceptible; the gut had in it a brownish grey mucus which seemed to be of a purulent nature. The jejunum and ileum showed no marks of disease; their coats were strong. The caput coli was very much distended with wind. The bladder was very much thickened in its coats and contracted; had no urine in it. The kidneys showed evident marks of engorgement and inflammation; the right kidney was much the most affected. The anterior and superior cortical portion was in a state of gangrene and very black half an inch. On cutting into the substance of the kidney a dark grumous blood gushed out profusely. The kidneys were much warmer than any other of the viscera. The uterus showed no marks of disease; it, however, appeared to be preternaturally small. The ovaries were not at all diseased.

Case 5th. September 15th. M., was brought into the hospital last evening; said he had had an attack of cholera morbus shortly after leaving Baton Rouge some little time previous. On arriving in Natchez he hired himself to the brick maker, and in three or four days was attacked with what he thought to be a return of his cholera morbus, which was in reality yellow fever. With this mistaken idea he had been treated with stimulants, as toddy, laudanum, etc., until he came to the Hospital (three or four days,) and died this morning with black vomit.

The stomach was found, on examination four hours after death, to be very much inflamed throughout its mucous membrane; the inflammation

was as great about the cardiac orifice as also the pyloric. The peritoneal coat also showed marks of inflammation, as did that about the coeliac artery. The duodenum was also inflamed. Its coats were very tender. The liver was very much enlarged, and its blood vessels filled with a dark grumous blood. The gall-bladder looked natural, but was filled with black bile. The jejunum, ileum and colon were healthy except in some places, for an inch or so, in extent; they were swelled up by wind. On piercing one of those inflated portions, a most horribly fetid odor was emitted that nearly suffocated me. The colon was much distended with feces of a brownish grey appearance. The duodenum contained a slimy matter; bile was also perceptible in many places in the duodenum, which did not seem to have incorporated itself with the above-named slimy matter. This slimy matter appeared to be mixed with a purulent discharge. There was no black vomit in this bowel. The stomach was, however, filled with it, which looked like the black vomit he had discharged before death. On comparing the black matter of the stomach with the black matter in the gall-bladder, I perceived a manifest difference. There was also found a considerable difference between the black matter that issued from the liver on cutting into its substance, and that of both the stomach and gall-bladder. The right kidney was inflamed; the left showed little marks of disease. The difference between the kidneys was mentioned by Mr. Sharpe, who was no anatomist. The spleen was of its usual size; part of it was scirrhus. Bladder thickened in its coats, and a table-spoonfull of yellow urine in it.

Case 6th. September 16th, 1823. Mr. —, a Spaniard, aged about 35, was attacked with yellow fever yesterday, and died in less than twenty-four hours; took no medicine as I know of. He was brought to the hospital, and died in an hour and a half afterwards with black vomit.

He was examined almost immediately after death. Dr. Denny assisted in the examination.

On opening the abdomen, the omentum was found very much inflamed. The mucous membrane of the stomach was inflamed throughout its whole extent. The duodenum was inflamed very highly throughout its whole extent and in all its coats; a part of it, as large as a crown piece, was completely sphacelated. The other bowels, though engorged with blood, were not inflamed.

The exterior coat of the right kidney was highly inflamed; the left less so. The substance of the kidney showed little marks of disease. The bladder was contracted, and had but little urine in it. The spleen did not show much marks of disease, and was not above the usual size. The



liver did not seem as much diseased as in many of the former cases. It was, however, enlarged probably one-third above the usual size. On cutting into its substance, the blood-vessels of the liver were found to be much distended with black, grumous blood. The liver was of a greenish color. The membranes that surrounded the great vessels that enter in the portæ of the liver, and those that were adjacent to the lobulus spigelii, were highly inflamed. The gall-bladder had no unusual appearances, but was filled with a black ropy matter. The whole of the abdominal viscera (the spleen excepted) showed marks of engorgement, and those parts which I have mentioned showed marks of inflammation.

An incision was then made on the scalp from ear to ear and the integuments dissected so that the scalp hung over the face and occiput; no appearance of disease except turgidity of blood-vessels. The cranium was then sawed across on a level with the highest part of the ears, and burst up from the dura mater. The dura mater showed no signs of inflammation; the dura mater was then cut round and taken off. The pia mater was very much inflamed and by its dipping down among the convolutions of the brain, gave the appearance of the substance of the brain being diseased, which, however, was not the case, the membrane alone being inflamed. Dr. Denny thought that the pia mater where it surrounds the optic nerves at their origin was more inflamed than elsewhere. The lateral ventricles were filled with a serous fluid nearly the color of urine. The cerebellum showed the same appearances of inflammation that the cerebrum did. Its convolutions being smaller gave it the appearance of being more inflamed, but the pia mater was not more highly inflamed in the cerebellum than cerebrum. The tuber annulare and medulla oblongata showed high marks of turgescence and inflammation in their membranes.

Case 7.—Mr. Andrias, a native of Sweden, aged 30, was admitted into the hospital on the second day of his disease. Died on the third.

This man never complained of any pain except a little pain of his head; his pulse was full and strong, and beat about 75. In fact he appeared to have little the matter with him. His eyes, however, looked red; and there was a little purulent secretion on the conjunctivæ which I thought was probably natural to the man. His tongue did not indicate much disease. The man chose occasionally to walk about his room, talked very rationally, and appeared quite cheerful. I bled him probably  $1\frac{1}{2}$  lbs., but did not reduce his pulse. I thought it quite unnecessary to take away a large quantity as he appeared so smart. Then gave a puke of tartar emetic, which I was told operated well.

I saw him next morning ; his pulse was good ; his tongue looked well ; he said he was better. Prescribed one table-spoonfull of castor oil every six hours.

Saw him in the evening ; he still seemed mending ; oil had operated, and he was so smart I thought it unnecessary to prescribe anything, but to have his bowels kept open, and give a little nourishment.

I was much surprised on visiting the hospital next morning to find him a corpse. Was informed that suddenly in the night he grew delirious, got hold of a stick and marched about the house and alarmed all the patients and attendants.

I examined his brain ; found the pia mater very highly inflamed throughout its whole extent. The dura mater looked healthy except in a few places, it looked speckled with blood as if fine particles of blood had fallen on it ; so did the brain. The plexus choroides highly inflamed. The lateral ventricle filled with serum of a yellow color. The lining membrane of the spinal marrow inflamed as far as I could examine it.

The stomach had not a particle of black vomit in it, but was filled with gruel. The villous coat of the stomach was not the least inflamed. In fact the stomach showed less marks of disease than any other viscus of the abdomen. The duodenum was inflamed in all its coats, but not mortified. The other bowels were engorged but not inflamed. The membranes enveloping the kidneys, highly inflamed, the right much the most. The peritoneum on the posterior surface of the liver, with the ligaments that it forms, and the coverings it makes for the large vessels that go to the liver, was highly inflamed. The membranes near the lobulus spigelii much inflamed. The pancreas slightly adherent to the duodenum. The gall-bladder looked healthy yet was filled with a ropy black bile. The liver was somewhat enlarged, and of a singular green color like the masticated food of horses, that we occasionally see on the bridle bits. Vena porta very turgid with black blood. The heart looked healthy. The lungs had a singular appearance, and were very heavy, being turgid with blood, mixed with a kind of froth like saliva.

Case 8.—Sept. 23. Mr. Schlegel, a young man, about 22, from Ohio, was brought into the Hospital on the second day of his disease. Died on the third day of his disease. Treatment on the third day, was mild purgatives every five hours. He had black vomit when he came in.

I examined his brain. There were evident signs of inflammation in the pia mater, though the inflammation was slight compared to case the 7th and 6th. This man had never been delirious. The lateral ventricles were not filled with a serous fluid,

On opening the abdomen there was found a considerable collection of serous fluid of a yellow color, amounting to upwards of a quart, forming ascites.

The small intestines were affected with intussusceptions in four different places. The stomach showed no marks of inflammation in any of its coats; it was filled with the black vomit with which the patient died. The omentum minus or hepato-gastricum that extends from the liver to the smaller curvature of the stomach, was inflamed. That part of the omentum minus which invests the lobulus spigellii and that involves the branches of the cœliac artery and that extends to the upper part of the duodenum was very highly inflamed. The great omentum was inflamed throughout its whole extent. So was the omentum colicum. The whole laminae of the mesocolon that bind down the duodenum and involve it, were highly inflamed. The peritoneum likewise where it is reflected off of the duodenum, forming the ligamentum duodeni renale and the ligamentum duodeni hepaticum, was highly inflamed. The duodenum itself was inflamed throughout its whole extent. The inflammation in the cellular membrane (which accompanies this bowel in greater profusion than any other) was very great, and gave to it a beautiful scarlet color. The adipose membrane surrounding the kidneys was much inflamed.—The liver was somewhat enlarged and of a greenish color. The spleen was enlarged and slightly scirrhus on the anterior part. The gall-bladder was filled with black bile. The pancreas adhered to the duodenum. The mesocolon which confines betwixt its laminae, the pancreas, was highly inflamed. The colon in some places was inflamed but it was actually loaded externally with bile where it makes its sweep by the liver and gall-bladder. There was fully, I think, an ounce of bile extravasated.

Case 9th.—Mr. James Lee, from Alexandria, Louisiana, a very large and corpulent man, was brought into Natchez hospital on the third day of his disease, moribund, and died the next morning at 2 o'clock. His pulse was very quick, beating upwards of 100 times in a minute, whereas, in the majority of cases of yellow fever that came under my care, the pulse was preternaturally slow, especially in the second stage of the disease, being not more than 57 generally. He complained of great pain in the back and head; took an emetic which operated; this, with some calomel and jalap that he had previously taken, were all the remedies I knew of.

On opening the abdomen of this subject, the marks of inflammation were much less than in many of the preceding cases. The omentum majus was but little inflamed. The stomach showed no marks of inflammation on its peritoneal covering. The omentum minus which is attached



to the small or posterior curvature of the stomach, was inflamed. The mucous membrane of the stomach was inflamed, particularly that part of it which lines the greater curvature of the stomach. The inflammation, however, was not uniform, but in small patches. The stomach was cut off at the cardiac orifice. The ligamentum latum suspensorium or falciform, with the ligamentum teres that lie along the convex surface of the liver to the diaphragm were cut. No mark of disease was perceptible in these ligaments. The coronary ligament that is reflected from the diaphragm on the liver was also cut, so were the lateral ligaments. The right lateral ligament that attaches the great lobe of the liver to the diaphragm, and the left lateral ligament that attaches the smaller or left lobe of the liver to the diaphragm and spleen were both inflamed; so was the diaphragm at these points. The connection of the spleen with the diaphragm was also cut and found inflamed. The mesocolon that includes the pancreas in its laminae was also cut and found highly inflamed.

The kidneys were raised from their bed on the muscles of the loin with their investiture or capsule of cellular membrane. The mesentery was cut up and the whole of the abdominal viscera, were taken from the abdomen and turned over so as to have a back view of them. Besides the preceding appearances of disease the following are the chief morbid appearances: Beginning with the kidney—the cellular membrane investing the kidneys was very highly inflamed, the parietes of the pelvis of the kidneys, were also highly inflamed, and even extended to the infundibuli and papillae. The tubular part was filled with a reddish water. The cortical part much engorged. The membranes investing the capsulae renales were inflamed.

The duodenum was found inflamed in all its coats. It was highly inflamed where it touches the gall-bladder also in all its course where it is tied down by the mesocolon; here the mesocolon was of a deep scarlet color. The renal and hepatic duodenal ligaments were also much inflamed. The membranes investing the whole posterior surface of the lobulus papillatus or spigelii, and the lobulus caudatus, the lobulus anonymus or quadratus, together with the peritoneal and cellular membranes investing the vena portae, the vena cava hepaticae and the arteria hepaticae were inflamed. The gall-bladder was filled with black bile; the liver enlarged and of a greenish hue; the blood-vessels filled with grumous blood. The vena cava was much inflamed where it passes between the back part of the great lobe and the lobulus spigelii in the fissure called fissura venae cavae. And here, I may remark, that the inflammation adhered to the membranes of this great vessel until it emptied itself into the right auricle of the heart. The mesentery was

not inflamed, although engorged. The bowels from the duodenum down showed little marks of inflammation. The cæcum, however, which is attached to the right side of the capsule of the kidney, and where the colon is attached on the left, showed marks of inflammation.

On looking into the abdomen when the viscera were removed, the cellular tissues about the great vessels were much inflamed ; so seemed the fine tissue covering the iliacus and psoas muscles ; the psoas muscles appeared to be preternaturally weak in their attachments to the vertebræ. I here mention, though out of place, that the needle penetrated the skin of case the 7th much more easily than any other subject dissected ; the skin seemed almost rotten.

I then sawed through the vertebræ and dissected them out from their connection with the ribs and the muscles of the back, ribs, and loins.— Having taken out the vertebræ I examined the spinal marrow. The investing membrane showed slight marks of inflammation.

The lungs on opening the thorax looked natural, their posterior part inflamed ; so did the heart ; but on cutting into the heart I found both ventricles filled with a substance inclosed in a reticulated tissue that much resembled bile, so much so, that a gentleman standing by, exclaimed, “ you have cut into the gall,” he being no anatomist and not knowing where the gall-bladder was. Except the yellow hue, these substances were much like oysters, and had large strings going off from them extending into the blood-vessels ; there were nearly a dozen of these substances found in the heart. Their formation unquestionably must have been anterior to death. I preserved them.

[ *To be continued.* ]

## PROGRESS OF MEDICINE.

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ART. I.—*Typhus Fever*. Translated from the French, for the New Orleans Medical and Surgical Journal. By J. P. BARBOT, Apothecary.

[Dr. Emile Chauffard, Physician of the Hospital of Avignon, (France) has recently communicated to the original department of a respected cotemporary periodical, namely, the *Gaz. Hebdom. de Méd. et de Chir.* (numbers 25, 27, 30, 31,) a paper having for its title, "*Etude Clinique du Typhus*," from which the following extracts concerning the treatment of that malady are taken.]

*Post-mortem appearances*.—By post mortem examinations we can ascertain how and by what organic lesions contagious typhus is characterized anatomically, and secondarily; how and in what it differs in these changes from other febrile diseases, and particularly from typhoid fever with which we might have a tendency to confound it. Four autopsies were made. Each one showed the following alterations: *Engorgement of the sinuses of the dura mater* and arachnoid vessels; slight serous effusion in the ventricles; hypostatic effusion of the pulmonary tissues towards the lower portions; engorgement of the mesenteric and intestinal veins; liver and spleen dark colored and of a normal or slightly increased size. Do these alterations indicate anything characteristic of and proper to contagious typhus? Are they not always found in almost all severe fevers of short duration, and particularly in the pernicious, lethargic intermittent type? We have carefully examined the mucous membrane of the small intestine; it will readily be supposed that we wished to see the condition of Peyer's glands. These patches, minutely examined and studied for a great length starting from the ilio-cæcal valve, have shown no trace of alteration. Here then the post-mortem characteristics of typhoid fever fail entirely. This would be a new proof of the distinction between these two diseases if any were necessary. This distinction has moreover been shown by MM. Gerhard, Feury and others who have studied contagious typhus.

*Treatment*.—The first question to be answered is: After having ascertained the *prodromata* of typhus and acquired the certitude of contagion, can we check the subsequent development of the disease? I lack the *data* necessary to solve this question practically. The duration of our epidemic was so limited, that though I had time to make my re-



searches, and through these, to be able to state with more precision, than I think any one else had done before me, the prodromatic characteristics of this disorder, still, before I had formed the exact and precise notions expressed at the beginning of this work, the fever had left us. I have consequently not been sufficiently certain of the disease through its *prodromata*, to attempt to combat it. Besides, the most efficient method to do so, namely, isolation of the patient, failed me. But if I may judge by analogy with what occurs in other eruptive and contagious fevers, these attempts would be rarely attended with complete success. As soon as the virulent principle of typhus is received by and incorporated in the system, and the vital forces are specifically acted on by this agent, the disease has acquired a strong hold ; and the development of its successive stages becomes a necessity. I will, however, take care not to express any positive opinion on this subject. There is no proof that a first morbid impression may not be successfully combated, without having recourse to specific medication, particularly, if we carefully and promptly remove any cause that might aggravate this impression, or increase it by a new infection to the existing contagion.

But if we cannot with certainty arrest the malady in its precursory stage, we may hope to modify it considerably. Several means seem to us proper for this purpose. The first, simplest and most important of all, should be to remove the patient whose *prodromata* show infection, from the infected place, from any cause of contagion, whether proximate or remote. Place him, as much as possible, in a large, well ventilated room, opening to the south in preference, so that the windows may be kept open during part of the day-time ; and at night, if the locality be so arranged as to permit it, a door opening into an adjoining room should be kept open, so as to permit a free circulation of air. Avoid all extremes of heat and cold ; for we cannot yield our approbation to the preconceived idea of Hildebrand, who thinks that in order to destroy the miasm of typhus fever, and to check the disease before the chill has come on, we need only to use a sufficient degree of cold to be enabled to destroy the typhus agent, or prevent at least its action on the body ; and for that purpose he advises cold effusions all over the body, cold baths, or rubbing with snow, as a remedy against typhus already begun. This practice, which Hildebrand himself never tried, being founded on hypothesis only, appears to me inefficient and dangerous.

We must then endeavor to place our patient in the external conditions I have already enumerated above ; if in a hospital, small well ventilated rooms, open to the south, are proper. These precautions, moreover, are not only applicable to the prodromatic stage, but to the whole

course of the disease ; by attending to them early, we are prepared to meet the disease whether of long or short duration.

We must at the same time, endeavor to expel, if possible, the virus introduced into the system, as also to check its baneful effects on the general strength and sensibility. Emetics appear to be best adapted to fulfil these indications. If the extraction or expulsion of the poison can be done, nothing can do it more promptly and efficaciously than emetics. Whether the miasm has united in part to the salivary secretions, or has penetrated into the stomach, or has been introduced by the respiratory function into the pulmonary organs, we may attempt its expulsion by emetics. These emetics, by increasing certain secretions, particularly those of bile and gastric juices, carry off from the system with these increased secretions a part of the absorbed *miasma*. These effects, more or less mechanical, are possible, though not rigidly demonstrated. But emetics produce other effects more certain ; which are the general shock they produce upon the system, the reaction consequent thereupon, the increased visceral action and secretion, the determination to the skin, the general relaxation of the system, and the restorative calm which follows. Doubtless, nothing is better adapted to arrest morbid impressions than these disturbances, followed by increased vital energy and subsequently by a soothing sleep. By these means we may hope to neutralize, or at least diminish, the deleterious influences of a contagious miasm upon the system, and restore it to its normal condition. On this account I think emetics may be very useful if given on the first appearance of the *prodromata*. But their action upon the system may be aided, by the exhibition afterwards of remedies calculated, like them, to sustain the vital force, and to expel morbid matter and contaminated humors. I allude to camphor and blisters. If, after the effects of the vomits are over, there still remains nervous derangement ; and if *tinnitus aurium*, difficulty of speech, with inability to control the movements of the hands and arms, and an unusual languor continue, I know of no remedy better calculated to relieve these nervous symptoms than camphor in moderate doses, given either in pills in the course of the day, or in an emulsion at dusk. The virtues of camphor against ataxic phenomena, particularly those of continued severe fevers, and especially those of the eruptive type ; its sedative influence upon innervation when disturbed by the febrile elaboration of morbid matter ; and its diaphoretic properties withal, have been too distinctly acknowledged by almost all the great clinical physicians, to allow of any question or denial. I have noticed these so often, that they appear to me to afford one of the best therapeutical demonstrations. This remedy then, appears to me to be truly appropriate to the *prodromata* proper to ty-

phus fever and I would exhibit it with confidence in these conditions.— Besides it, I would have no hesitation in applying a blister, either to the arm or to the inside of one thigh. Artificial ulcerations or suppurations established before the invasion of fever, cannot increase it, and their good effects being acknowledged, we have nothing to fear from their use. May not these artificial suppurations contribute to the relief of nervous centres, remove spasms, give free action to the vital force? May they not give exit to the morbid matter with the pus discharged by them? Above all, do they not favor a determination to the skin, do they not excite upon that surface the action by which nature tends to liberate herself of morbid influences? Do not the beneficial prophylactic effects of artificial ulcers, setons or issues, in the great contagious epizootics confirm these suppositions?

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ART. II.—*Tableau of the use of Iodine in Scrofula, and the symptoms and maladies which may complicate themselves with that disease:* By A. M. Martin Lauzer. Translated from the *Journal des Connaissances Médico-Chirurgicales*, of July, 1856. By M. MORTON DOWLER, M. D., New Orleans. (Concluded from page 520.)

COLD ABSCESS OR SYMPTOMATIC ABSCESS.—Besides the general treatment to which the preceding formulæ may be applied, Lugol had already, in his time, ordered iodated injections. This mode of application, perfected and applied in a more general manner by M. Boinet, has since the appearance of his works been very extensively practised. In cases of symptomatic abscess, his process is the following: The patient being on an inclined plane, with the head raised, he makes a fold in the skin in the most depending and salient point of the tumor, in order to remove the parallelism of the point of puncture in the skin from that of the tumor after the operation. The puncture being made, and the greater part of the matter evacuated, he stops the canula with a plug of wax, and then reversing the position of the patient on the inclined plane, i. e., with his head depressed, he injects ʒiii—3vi of one or other of the following mixtures: No. 1. R. tincture of iodine, 3vi; distilled water, ʒiij; iodide of potassium, gr. xv; No. 2. tincture of iodine, ʒxijss; distilled water, ʒxijss; iodide of potassium, gr. xv. In cold abscesses, Lugol injected the caustic solution: R. iodine, ʒj; iodide of potassium, ʒxxiii. The injection being terminated, M. Boinet withdraws the syringe and plugging again the canula, endeavors by pressure, to produce a flow of the injected liquid towards the origin of the disease.— After a quarter of an hour thus employed, he allows the fluid to pass



backwards and forwards, in the tract of the abscess, and finishes the operation by closing the wound made with the trochar, by means of English taffeta compress, with a retaining bandage. It is often necessary to repeat the injection many times in order to effect a cure. The renewal of the treatment should not be delayed till the tumor acquires its primitive volume; and if circumstances permit, we may employ the iodine stronger and stronger. The symptoms of iodism, which sometimes follow these operations, are unattended with danger, are of short duration and spontaneously disappear.

*The tincture employed in these operations is that of the codex, to which preparation M. Boinet adds 1-25 part of iodide of potassium, or 1-50 part of tannin, in order to render the iodine more soluble.*

ACUTE ADENITIS.—Brault has recommended the following scent-bag: R. Iodine in powder gr.  $1\frac{2}{3}$ —gr.  $3\frac{1}{3}$ , to be placed between two pieces of wadding, and enveloped in gummed taffeta.

Boinet employs the simple tincture of the codex, as a local application.

CHRONIC CUTANEOUS DISEASES.—To the iodated formulæ amongst which are to be preferred the powder of Sency, the drinks iodated with the four thousandth part of iodide of potassium given in doses from one to eight dessert spoonfuls two or three times a day, iodated beer, iodated syrup of horse-radish, of Boinet, in doses of two to four table-spoonfulls a day—to these we add ointments of tincture of iodine or the caustic solution of Lugol. R. iodine,  $\mathfrak{zj}$ ; iodide of potassium,  $\mathfrak{zj}$ ; distilled water,  $\mathfrak{z}ii$ ; or the pomatum of Blasius: R. Iodide of sulphur, gr. xv to  $\mathfrak{zj}$ ; lard,  $\mathfrak{zj}$ ; or of the same: R. Iodide of potassium, gr. xv— $\mathfrak{z}i$ ; Gray ointment, (ungt. oxid. hydr. ciner.)  $\mathfrak{z}i$ .

AMENORRHEA.—The iodoform pills of Bouchardat may be given, or we may give the pastils of mocha of Pierquin, or we may give drops according to the following formulæ: *Tincture of the hydriodate of iron.* R. Iodide of iron,  $\mathfrak{z}ii$ ; rectified alcohol,  $\mathfrak{z}ii$ ; distilled water  $\mathfrak{z}ii$ . Take from fifteen to twenty drops in some bitter infusion; or the pills of Brera, according to the following: R. iodine, gr. viii; powdered liquorice gr. xx; extract of elder q. s. Eight pills, to be taken in two days.

CHRONIC BRONCHITIS. Besides the cod-liver oil, which is here the best remedy, we have also the biscuits of Dorvault, or the iodated bread of Boinet, and finally the iodated enemata, when the stomach cannot support iodine.

CARIES OF THE BONES.—To the general treatment, lotions or injections are to be used composed of the caustic solution of Lugol, or the tincture of iodine.

**TABES MESENTERICA.**—Amongst the iodated preparations, these which appear to be the most easily borne, are the mocha pastils of Pierquin, or lotions to the belly containing tincture of iodine.

**CHLOROSIS.**—Here naturally present themselves all of the formulæ in which iodine is associated with iron. The preparation most used is the syrup of the iodide of iron, according to the formula of Mailhe. R. Simple syrup, ℥xvi; tartrate of potash and iron, iodide of potassium, canella water, aa, ℥ii. M. Take from one to two table-spoonfulls daily.

Then we may refer to the iodo-bromuretted cod liver oil of Lunier, the iodo-bromuretted oil of sweet almonds of the same, (one to five table-spoonfulls) or the comfits of the proto-ioduret of iron of Gilles, composed as follows: R. Crystalized iodine, ℥xxxii; purified iron filings, ℥lxiv; sugar, ℥lxii; gum arabic, ℥lxiv; distilled water, ℥lxiv: make into twenty thousand comfits. *Chocolate with the iodide of iron*, (Pierquin.) R. Iodide of iron, gr. cv; chocolate, ℥xvi; take from ℥ss to ℥i daily.

*Iodo-ferrated pastils*: R. Iodine, gr. cexl; chocolate, ℥xvi; porphy-rized iron, ℥ii; water, ℥xxxiv; heat in a water bath till a colorless liquid is obtained, filter and add powdered sugar ℥xix; essence of mint, ℥i; make into pastils of  $6\frac{2}{3}$  grains each; ten to be taken daily.

*Gaseous iodo-ferrated water of Mailhe.*—R. Water, ℥x; bi-carbonate of soda, ℥i; tartrate of iron and potash, gr. viiss; iodide of potassium, gr. viiss; citric acid, gr. lxxv. M. Take from one to two half bottles daily.

*Iodo-bromo-ferrated solution*, (Lunier.) R. Iodide of iron, gr. xviii—xii. Bromide of iron, gr. xii—xviii; extract of gentian, gr. xv; water, 40 table-spoonfulls. Take from one to three table-spoonfulls daily.

*Iodo-bromo-ferrated pills*, (Lunier.) R. Iodide of iron, gr. xviii; bromide of iron, gr. xii; powder and syrup of gentian, q. s. Make forty pills; one three times a day.

*Pills of the iodide of iron*, (Boucharlat.) R. Proto-ioduret of iron, ℥i; honey, ℥i; liquorice in powder, q. s. Make into thirty-six pills; take from one to ten.

*Pills of the iodide of iron*, (Perrens.) R. Iodine, gr. xv; iron in powder (non-oxdized,) gr. xv; white honey, ℥iiss; powdered liquorice, ℥ss. Make into twenty-five pills to be coated with silver.

**CORYZA.**—Lugol has recommended the patient to snuff the following solution: R. Iodine, gr. 5-6—gr.  $2\frac{1}{4}$ —gr. iii; iod. potas. gr.  $1\frac{1}{2}$ —gr. iii—gr. vi; distilled water, ℥xvi—℥xvi—℥xvi.

ITCHING TETTER.—*Iodated topic of Houché*.—R. Iodine, gr. xv ; iodide of potassium, gr. xlv ; distilled water, ℥vi ; alcohol, ℥iiss.

DYSMENORRHEA. *Iodated enema of Cudet*.—R. Water, ℥ivss ; gum arabic, ℥ss ; tincture of iodine, gtt. v.

ENGORGEMENT OF THE EYELIDS.—*Collyrium of Dorvault*.—R. Iodide of potassium, gr. xv ; hydrolate of lettuce, ℥iii.

ENGORGEMENT OF THE PROSTATE.—Internally the iodated beer or the iodated draught of Boinet : R. Iodide of potassium, ℥i ; distilled water, ℥iii. Take from one to six table-spoonfulls three times a day. Externally lotions containing tincture of iodine or the iodated topic of Schœnlein : R. Sea salt, ℥xlss ; sulphate of magnesia, ℥ii ; tincture of iodine, ℥ss ; water ℥xvi.

VARIOUS SCROFULOUS ENGORGEMENTS.—Besides the general and internal treatment, the use of the following has been recommended :

1. *The pomatum of Brera*.—R. Iodine, gr. xv ; prepared lard, ℥v.

2. *Pomatum of the Iodide of Potassium*.—R. Iodide of potassium, ℥i ; prepared lard, ℥i.

3. *Balm of Schœffele de Thann*.—R. Animal soap, ℥ii ; iodide of potassium, ℥x ; alcohol at 85°, ℥xvi ; essence of citron, ℥i.

4. *Iodated Pomatum*.—R. Iodine, gr. xv ; iodide of potassium, ℥ss ; prepared lard, ℥xliiss.

5. *Balsamic Pomatum*.—R. Iodide of potassium, gr. xv ; balsamic lard, ℥iiss ; iodine, gr. iss.

6. *Iodo-hydrargyric Pomatum*.—R. Prepared lard, ℥i ; deuto-iodide, of mercury, gr. vi.

7. *Iodo-bromated Pomatum*.—R. Iodide of iron, ℥ss ; bromide of potassium ℥ss ; liquid bromine, gtt. x ; prepared lard, ℥iiss. And, lastly, lotions containing tincture of iodine, or the iodated topic of Schœnlein.

ENGORGEMENT OF THE PROSTATE.—*Iodated Bougie of Boinet*.—R. White wax, ℥ss ; iodide of potassium, ℥iiss ; hydrochlorate of morphine, gr. iii ; water, ℥iiss.

ENGORGEMENT OF THE CERVIX UTERI.—Boinet touches it with the tincture of iodine. Lisfranc gives the following solution : R. Iodide of potassium, gr. xv ; distilled Tilly water, ℥xlv. Take during the day in 3 doses, augmenting the iodide each week 6 grains.

FISTULÆ.—Boinet and Lugol have proposed certain lotions and injections, the first using tincture of iodine diluted in two parts of water, while Lugol uses the following : R. Iodine, ℥i ; iodide of potassium, ℥ii ; distilled water, ℥viii.

*Inunction with iodated pomatum. (Lugol)*.—R. Iodine, gr. ix—gr. xv --gr. xviii—gr. xxi ; iodide of potassium, gr. lxxiii—℥ii—℥iiss—℥iii ;



lard,  $\mathfrak{z}\text{ii}$ — $\mathfrak{z}\text{ii}$ — $\mathfrak{z}\text{ii}$ — $\mathfrak{z}\text{ii}$ . The treatment to be such as is applicable to fistulæ generally.

GOITRE.—This disease generally requires both a local treatment and an internal treatment by the bitter tonics and iodated preparations. In certain countries the external and local treatment is even neglected entirely. Besides the tonic bitters there may be given internally one of the following preparations :

1. The powder of Sency ; 2, the powder of Bouchardat, thus, R. Vegetable charcoal, gr. xv ; powder of sponge, slightly torrifed,  $\mathfrak{z}\text{v}$  ; hydrochlorate of ammonia, gr. xv. 3. The iodated sugar of Hannon, (see scrofula,) 4. The syrup of Boinet, (see scrofula.) Take from three to six table-spoonfuls. 5. The syrup of Dorvault, (see same) one to four table-spoonfuls. 6. The mixture of Véret, thus, R. iodide of potassium, gr. vi ; syrup of gum,  $\mathfrak{z}\text{iss}$  ; tincture of canella, gtt. xv ; distilled water,  $\mathfrak{z}\text{xxxxs}$ . Take a table-spoonfull on an empty stomach. 7. The pills of the iodide of potassium of Pierquin, (see scrofula.) 8. The pills of Voght, (see same.) 9. Pills of iodoform of Bouchardat, (see same.) 10. Enemata of gr. xv of iodide of potassium, in cases in which iodine is not supported by the stomach.

*External Treatment.*—There may be employed externally : 1. The balm of Schæuffele. 2. The pomatum of Brera, (see the two heads “engorgements.”) 3. Pomatum of iodide of potassium, (see same.) 4. Pomatum of ioduretted iodide of potassium, (see same.) 5. The iodated balm, thus, R. Rectified alcohol,  $\mathfrak{z}\text{ii}$  ; iodide of potassium,  $\mathfrak{z}\text{ss}$  ; mix, and add to the mixture animal soap,  $\mathfrak{z}\text{viss}$  ; rectified alcohol,  $\mathfrak{z}\text{ii}$ . 6. Collier de Moraud’s formula ; R. Sal. ammonia, sea-salt, (decrepitated,) burnt sponge, aa, equal parts. 7. The smelling-bag of Breslau. R. Iodide of potassium  $\mathfrak{z}\text{iiss}$  ; sal. ammonia,  $\mathfrak{z}\text{xx}$  ; bromine, gr. cccxxv ; powdered starch,  $\mathfrak{z}\text{iiss}$ . These last three preparations composed of powders mixed at the moment of making the smelling-bag are put on carded cotton and sewed between layers of muslin, to form the scent-bag.

ENGORGEMENTS OF THE TESTICLE.—Independently of general treatment lotions of the tincture of iodine and the pomatum of Walther have been recommended to be locally applied. The latter is thus prepared : R. iodide of potassium,  $\mathfrak{z}\text{i}$  ; carbonate of soda,  $\mathfrak{z}\text{i}$  ; Rose ointment,  $\mathfrak{z}\text{xiiss}$ . M.

HYDRARTHROSIS.—Beside the general treatment lotions of the tincture of iodine are to be applied. Surgeons also use iodine injections.

*Injection of Boinet.*—R. Tinct. of iodine,  $\mathfrak{z}\text{iiss}$  ; iodide of potassium, gr. xv. distilled water,  $\mathfrak{z}\text{iiss}$ .

*Bonnet's injection* : (*Lyons.*) R. iodine, gr. lxxv ; iodide of potassium, gr. lxxv ; distilled water, ℥xiii.

*Guibourt's injection*.—Iodine, gr. lxxv ; iodide of potassium, gr. lxxv ; alcohol at 90°, ℥iss ; distilled water, ℥iii.

HYDROCEPHALUS AND HYDRORACHIS.—*Hydrogogue Powder* (*John.*)—R. Iodine, gr. 5-6 ; calomel, gr. xv ; digitalis, gr. xv ; sugar, ℥ii. To be taken in sixteen doses, at three hour intervals.

Brainard has practised puncture and injection ; and Laborie has laid down the rules for this operation, viz: the tumor ought to be even, pediculated, free from ulceration of the skin, painless, fluctuating in all its parts, uniform in color, and the child to be of good constitution.

SYNOVIAL AND OTHER CYSTS.—The local, independently of internal and general treatment consists : 1. In lotions of tincture of iodine, or lotions of the rubefacient solution of Lugol, thus, R. iodide of potassium, gr. xxxvii ; hydrochrolate of ammonia, gr. xxxvii ; camphorated alcohol reduced, ℥iii. 2. Injections of the rubefacient solution of Lugol, (see abscess.) *Injection of the tincture*, (*Velpeau.*) R. Tincture of iodine, ℥iss ; distilled water, ℥iii.

*Injections with the tincture*, (*Boinet.*)—R. Tincture of iodine, distilled water, āā ℥iss ; iodide of potassium, gr. xv ; or on repeating the remedy : R. Tincture of iodine, ℥iii ; iodide of potassium, ℥i.

LEUCORRHEA.—In addition to treatment by tonic bitters, the pills of Pierquin or the iodo-bromuretted pills of Lunier, may also be resorted to, and there may be used externally lotions of tincture of iodine, or the rubefacient solution of Lugol, (see abscess.) Lastly injections of the tincture of iodine or the solution of Lugol diluted with one-half or two-thirds of water.

DISEASES OF THE EYES.—*Collyria of Dorvault.*—R. Iodide of potassium, gr. xv ; hydrolate of lettuce, ℥iii ; Boinet generally touches the parts affected with tincture of iodine, to which he adds a twenty-fifth part of the iodide of potassium.

*Srofulous Ophthalmia.*—Besides the above means, the collyrium of Magendie may be used : R. iodine, gr. 1½ ; iodide of potassium, gr. xviii ; rose water, ℥vss.

*Chronic Affections.*—Lotions, injections, or applications of Lugol : R. iodine, gr. 5-6—gr. 2¼—gr. iii ; iodide of potassium, gr. 1½—gr. iii—gr. iv ; distilled water, ℥xvi—℥xvi—℥xvi.

*Ulcerations.*—Lugol touches them with his solution ; Boinet, with the iodated tincture of iodine, (see abscess.)

*Specks on the Cornea.*—To be touched with the ioduretted tincture of iodine, or the rubefacient solution of Lugol, (see abscess,) or the above collyria of Dorvault and Magendie.

*Collyrium of Desmarest.*—R. Iodine, gr. 1-6 ; iodide of potassium, gr. xv ; distilled water, ℥v.

*Collyrium of Reiniger.*—R. Iodine gr. 5-6 ; iodide of potassium, gr. viii ; rose water, ℥iii.

*Collyrium of Evermann.*—R. Iodide of potassium, gr. xv ; distilled water, ℥iiss.

**OZÆNA.**—Let the aforementioned injections, or the rubefacient solution of Lugol, or the following solution of Gautier be snuffed up the nose : R. iodide of potassium, gr. vi ; tincture of iodine, ℥ss ; distilled water, ℥xxxiv.

**PHTHISIS PULMONALIS.**—In this disease the cod-liver oil is the iodated preparation which has had the greatest success ; then comes the biscuits of Dorvault, containing each a grain and a half of iodide of potassium,—the iodated loaves of Boinet, with from ℥iiss to ℥ss of the ashes of Varrée, to each loaf of ℥lxiv ; the mineral waters, of Challes, from one to ten glasses daily ; the sthenic paste of Hannon, (paste of Lichen with cod-liver oil,) the following potion of Magendie. R. distilled lettuce water, ℥xviii ; solution of the iodide of potassium, gtt. xv ; medicinal prussic acid, gtt. xii ; syrup of marsh-mallows, ℥i. Enemata of iodide of potassium, gr. xv ; with ℥viiss of distilled water.

**PORRIGO.**—Trousseau and Boinet have employed the pure tincture of iodine in lotions. The pills of Voght are also given in this disease.

**FISTULOUS PASSAGES.**—Injections of the tincture of iodine with the addition of a twentieth part of the iodide of potassium ; injections with the rubefacient of Lugol ; or the injections recommended in coryza.

**SCROFULOUS TUBERCLES.**—Lotions with the tincture of iodine, (Boinet) with the topic of Schœnlein, noticed when speaking of engorgements of the prostate.

**TUMORS AND CHRONIC ENGORGEMENTS.**—1. Lotions with the tincture of iodine ; 2. Liniment of Cloquet as follows : R. alcoholate of rosemary, ℥x ; tincture of iodine, ℥ii ; ammonia, ℥ss ; sedative liquor, ℥ss ; 3. The iodurated pomatum of Lugol, (see fistulæ) ; 4. The iodated pomatum of Reicke, as follows : R. iodide of potassium, ℥i ; medicinal soap, ℥ss ; rose-water, ℥ii ; rose-ointment, ℥vi ; 5. The iodated belladonna pomatum of Harvez de Chégoin : R. lard, ℥i ; iodide of potassium, ℥ss ; extract of belladonna, gr. viiss ; 6. The pomatum of Gray made with equal parts, ℥ii, of iodide of potassium and alcohol triturated with lard, and mercurial ointment, āā, ℥i ; camphor, ℥ii ; 7. Iodated plaster of Roderberg, composed of ℥ss of iodine, or ℥iiss of iodide of potassium ; 8. The plaster of Boinet, as follows : R. plaster of Vigo, ℥ss ; extract of belladonna, ℥ii ; extract of cicuta, ℥ii ; iodine finely powdered, gr. xv.



HYDRARTHROSIC TUMORS.—1. The iodated balsamic pomatum of Boinet; 2. Iodo-ammoniaco camphorated solutions, (see cysts); 3. Injections of the tincture of iodine; and internally pills of the iodide of potassium of Pierquin, and the pills of Voght.

TUMORS OF THE BONES.—Tincture of iodine; the topical application of Schœnlein; the iodated pomatum of Lugol. Internally the cod-liver oil; the biscuits of Dorvault; and the bread of Boinet.

*The Smelling-bag of Tanchou.*—R. Iodide of potassium, gr. lxxv; burnt sponge, ʒiiss; sal. ammonia, ʒx; sea-salt, ʒiiss; camphor, opium or valerian may be added.

*The pulverulent topical application of Chabrely.*—R. Starch in powder, ʒii; iodine in powder, gr. viiss; acetate of morphine, gr. viss.

ULCERATIONS OF THE UTERINE CERVIX.—Lotions with the solution of Lugol, (see fistulæ,) or the tincture of iodine ʒiii; with tannin ʒi; iodide of potassium, ʒss; or the topic of Chabrely, (see tumors of the breast.)

TUMORS OF THE BREAST.—General treatment and tincture of iodine in lotions or the resolute calamatier solution as follows: R. iodide of potassium, gr. lxxv; hydrochlorate of mercury, gr. xv; alcohol at 21° ʒiii; essence of roses, gtt. v.

ULCERATIONS OF THE VAGINA.—Tincture of iodine, solution of Lugol, or the topical application of Chabrely.

ULCERS AND CUTANEOUS TUBERCLES.—Tincture of iodine, rubefacient solution, and caustic solution of Lugol (see chronic cutaneous affections,) topic of Chabrely, iodated pomatum of Lugol, (see fistulæ,) the balsamic pomatum of Boinet, (see serofulous engorgements,) with 5-6 to gr. iss of morphine.

ACUTE OR CHRONIC VAGINITIS.—Lotions of, R. tincture of iodine, ʒiii; iodide of potassium, ʒss; tannin, ʒi; sufficiently diluted with distilled water.

### ART. III.—Treatment of Fevers.

1. *Continued Fevers*—In the London Medical Society, Dr. Semple read a paper on *the prophylactic and curative treatment of continued fevers*, the more practical portion of which, together with the debate thereupon, is extracted from *The Lancet*:

In reviewing the remedies employed in the general treatment of fever, blood-letting, which was formerly so strongly recommended, was now contra-indicated, in consequence of the alteration which had taken place in the type of disease, although, so lately as 1830, bleeding was

practised in fever with success. Putting the lancet out of the question even leeches and cupping-glasses must be used with great caution in modern practice ; and it must be remembered that any mode of depletion was less easily borne by patients in a hospital than in private practice ; because in the former, the lowering influence of the poisoned atmosphere affected the vital powers, and tended to produce collapse. Mercury, which was once extolled as a remedy in fever, possessed very little power over that disease, although in former years it may have been efficacious ; and it was an error in modern practice to adhere to the routine custom of giving mercury in this and other diseases, when experience has shown that this mineral, indiscriminately employed, is more injurious than beneficial. Quinine, which is a very valuable remedy in intermittents and remittents, could not yet be said to be equally efficacious in continued fevers, at least not in cutting short that disease ; and the treatment, by large and frequent doses of this alkaloid, had not been found so successful in other hands as in those of Dr. Dundas, who strongly recommended its employment in this manner. Dr. Semple did not consider this question as finally settled ; but he placed great reliance upon the careful observations of Dr. Barclay and Dr. Peacock upon the subject. Purgatives were also injurious when carried to any length in the treatment of fever ; for they always tended to produce depression, even if, as by irritating the inflamed bowel in typhoid fever, they were not positively mischievous. The mildest aperients should therefore be employed, and amongst the best of these were small doses of castor oil. Typhus and typhoid fevers, as they were different in their nature, required different methods of treatment. In the first, the tendency to depression must be combated by wine, brandy, carbonate of ammonia, and other cordials and stimulants, and to relieve the head symptoms the head should be shaved, and a blister applied to the nape of the neck ; in the second, or typhoid fever, the necessity for stimulants at first is not so obvious ; but the inflamed and irritated bowel should be an especial object of care, and constipation and diarrhœa, which may alternately prevail, must be met by appropriate treatment ; the former by mild mercurials and alteratives ; the latter by astringents, opium, and acetate of lead. The prophylactic treatment of fevers was even more important than the curative, for when a fever was once established its issue was doubtful, and its treatment difficult. Typhus fever was certainly the most contagious, while typhoid arose from local or endemic causes. The establishment of fever hospitals he (Dr. Semple) regarded rather as a necessary evil than as a positive good ; they certainly diminished the danger of this disease in the localities from which the patients were drawn, but they spread it in the hospital itself ; and probably the best hygienic treatment of fever was to isolate the patients, if that could be accomplished, by placing them in situations which were airy, clean, well ventilated, and remote from one another.

Mr. Harding did not agree with the author that writers on fever had not altered their opinions since 1830. He believed they had ; and the type of disease had not changed. Synocha in that year was almost unknown ; and he had seen scarcely any cases since. Synochus, on the contrary, was more common both then and now. Bleeding was resorted to, because at first the disease was inflammatory ; but collapse soon

followed. Experience showed that this collapse was more to be dreaded than the inflammatory state ; and we then came to treat the complaint on the expectant principle. The change of treatment was the result of experience, and a better understanding of the disease, and was not due to a change in its type. With respect to cases not doing well in hospitals, he thought this was due to the fact that the sufferers were among the lowest class of persons, who had been enfeebled by privations. The fact, however, applied more particularly to *general than fever hospitals*.

Dr. James Bird had observed the difference which had prevailed in regard to the treatment of fever during the last thirty-five years, and considered that the substitution of a mild form of treatment for depletion was not due to a change of type in the disease, but to our improved knowledge of its pathology. He did not agree in the division of Dr. Jenner of fevers into typhoid and typhus as being essentially different ; and considered that patients laboring under typhoid fever might, by the emanations from their bodies, under depressing circumstances, generate typhus.

Dr. Thudichum referred to the researches of Pettinkoffer as to the causes of typhus in Munich and other German cities, which he had found to depend on decomposing fæces and urine, the drainage in that and other towns favoring the percolation of the excrement and urine from the soil. He referred to the fact, that in typhus the fæces have an alkaline reaction, whilst, under circumstances, the reaction was acid. The urine also contained large quantities of urea. He suggested the use of the phosphoric acid, in the proportion of two drachms to half a pint of water, in cases of typhus.

Dr. Camps referred to the influence of decomposing animal matter generally on the production of typhus, and mentioned two or three cases in point.

Mr. Edenborough believed that the type of the disease had altered to a great extent during the last twenty-nine years. The stage of collapse was not so marked then as at the present time. Depletion could then be resorted to, to a greater extent, and with greater benefit.

Dr. Headland inquired if Dr. Semple had finally decided that quinine was useless in cutting short typhus, or typhoid fevers ; the two objections which had been raised to its administration in these diseases, he (Dr. Headland) suggested might be overcome. The first objection to its use was the dry state of the tongue and skin ; the second, the danger of irritating the stomach by the large quantity of quinine required. The first might be overcome by the previous administration of a small dose of tartar emetic ; the second, by giving the quinine largely diluted, say with half a pint of water, with the addition of a small quantity of a vegetable acid. He objected to an enema of acetate of lead and opium, as a decomposition would take place.

Dr. Semple, in reply to the observations of some of the speakers, must adhere to the conviction, that the type of disease had undergone a change during the last twenty years, and that he could not condemn the treatment formerly employed, inasmuch as it was applicable to the epidemics of the period. He could not agree with Dr. Bird that typhus and typhoid fevers could be interchanged in any degree ; but he be-



lieved that they ran their course distinct from each other. He had indeed seen cases which were recovering from typhoid, fall into typhus by contagion, but this seemed to him to prove the non-identity of the two diseases.

#### ART. IV.—*Treatment of Remittent Fever.*

Otis Frederick Manson, M. D., in his paper of 19 pages, on Remittent Fever, published in the Transactions of the Medical Society of the State of North Carolina, (1856,) divides this disease into three varieties, namely, the mild, the grave, and the adynamic,—his mode of treating which is subjoined :

*Treatment of Mild Remittent.*—Active measures will be found usually unnecessary during the chill, as the vital powers are fully competent to produce reaction. I disapprove of the method of torturing the patient with heavy bed-clothes and hot applications in this form, but consult his feelings in regard to them, and allow cool drinks in moderate quantity.

*In the Exacerbation.*—If the pulse is hard, or full and resisting, especially if attended with intense cerebral or spinal pain, a moderate bleeding from the arm will produce great relief, but this will be very rarely necessary. Local bleeding will be generally found sufficient, and is an invaluable adjunct. Leeches to the temples, or cups to the occipital or spinal regions may be freely applied, as the determination may indicate. If nausea and vomiting or other symptoms of gastric irritation be present, leeches or cups to the epigastrium will be followed by great relief ; and if these should be succeeded by a simple enema, under their conjoined action the bowels will gently respond, and add greatly to the comfort of the patient. Cold drinks, ice, the effervescing draught, and lemonade, may be freely allowed. Under this treatment the patient will find great alleviation from suffering, and the intensity of the fever will be diminished. At bed-time, say at 9 or 10 o'clock, it is almost our invariable rule to administer a cathartic dose of calomel and rhubarb, of 10 or 12 grs. of each. At some period before or after midnight, the fever will generally be found more or less to decline. We prefer this period for the commencement of the abortive means, because our experience teaches us that quinine, the principal remedy, is then better borne and produces its salutary effects in a more decided and complete manner than at any other time. We now, therefore, usually administer from 10 to 20 grains at a single dose, in pills, or diffused in a wine glass of cold water. We regulate the dose by the degree of fever present.—If it is intense, we administer the larger quantity ; if very moderate, the lesser will answer. Under the combined action of the mercurial and quinine, free evacuation of the bowels will usually occur, but rarely excessive. Three or four hours are now suffered to elapse, during which the topical bleeding is repeated if the local symptoms do not yield. The condition of the patient will now be found generally much improved.—

The cerebro-spinal pain is either removed or mitigated, the pulse less frequent and more soft, the skin relaxed and moist, and the gastric irritation subdued. We therefore repeat the quinine in diminished doses of 5 or 6 grains every 3 or 4 hours, until the period of chill has passed, generally exhibiting altogether from 25 to 40 grains before that time. In cases attended with much gastric irritation, or diarrhœa, the addition of a full dose of opium—say  $1\frac{1}{2}$  or 2 grains to 10 or 12 grains, of the submuriate, at bed-time—instead of the rhubarb, forms an excellent combination, which will enable the stomach to retain the quinine, afterwards administered, with more certainty. Under this simple plan of treatment, remittent fever, as it appears usually in this section, is certainly and safely cured. We have in this manner arrested the disease in many hundred cases, in one night. Owing, however, to the peculiar liability of the affection to relapse, or terminate in protracted intermittent, we usually continue treatment. We think it advisable to prescribe a mercurial alterative of calomel or mass. hydrarg. for two or three successive nights, followed by 8 or 10 grains of quinine, or 25 drops of oil of turpentine, in divided doses on the succeeding mornings. In cases attended with coma, delirium, or convulsions during the exacerbation, topical bleeding will be freely required and the application of cold.—We have, however, been more gratified with the effects of the *cold douche*, in these complications, than with any other remedy. A full dose of calomel should be given as soon as practicable, followed by stimulant enemata. In mild cases, however, it will not be necessary to resort to very active treatment, as these symptoms gradually yield with the subsidence of the paroxysms. In this disease occurring in puerperal women, in addition to the general plan detailed, free local depletion over the uterine region is practised, succeeded by warm fomentations. The local symptoms disappear readily with the arrest of the paroxysms. In the form described under the title of adynamic remittent, occurring as a primary form, this mode of treatment will usually suffice; but in protracted cases a different practice will be found necessary, as quinine is not borne well, and the antiphlogistic remedies detailed are contra-indicated. Minute doses of calomel combined with opium, will usually be found of great service, along with the employment of the oil of turpentine, which may almost be regarded as a specific in this variety. It is more suitable than quinine in this condition, as it is better tolerated; and whilst it possesses febrifuge properties very similar to the alkaloid, it also exerts a happy influence over the gastric and intestinal irritation so commonly present. It may be given in doses of 10 to 20 drops, in emulsion, repeated every three or four hours, until the symptoms yield.

It should be persisted in until the patient is fairly under its influence, unless the effects it occasionally produces, viz: hæmaturia, strangury, or its peculiar intoxication, supervene, when, of course, it should be discontinued. It would require too much space to speak of this remedy in this place, as it deserves.

TREATMENT OF GRAVE REMITTENT.—*The Cold Stage*.—In this grade external means are all-important. Warm applications are to be assiduously made to the parts reduced in temperature, together with stimulating frictions. These should be freely applied to the whole length of the spinal column and the extremities. A large blister should be placed

over the epigastrium, and if the head is affected, another to the nape of the neck. Medicine.—To produce reaction, along with these applications, I prefer enemata of quinine. The plan preferred is, to dissolve 10 grains in a wine-glassful of weak infusion of capsicum, (made by adding 20 grains of the latter to a pint of boiling water,) with the addition of a few drops of elixir of vitriol. This is thrown up the rectum every half hour until symptoms of reaction ensue. If diarrœa has been, or is present, I prefer enemata of quinine and laudanum, the former first dissolved in water by the addition of the acid. By these means alone, cases apparently hopeless have been rescued. In a case of very protracted cold stage, a combination of 1 grain of calomel, 1 grain of quina, and  $\frac{1}{4}$ th of a grain of opium, together with frequent doses of camphor water, induced a speedy reaction. The oil of turpentine in spinal congestion is also an excellent remedy. 10, or 15 drops, alone or combined with laudanum, may be given every 1 or 2 hours, or more frequently.

*The Exacerbation.*—The reaction is sometimes intense. When this occurs, I have ventured on the abstraction of blood from the arm in moderate quantity with decided benefit; but this is seldom necessary. The case now only requires to be treated as the milder grade, save, perhaps, with a more liberal use of quinine. A moderate dose of calomel (10 or 15 grs.) alone, (or combined with 1 or 2 grs. opium, if there is much gastric irritation or diarrœa,) is followed in 2 or 3 hours by a full dose of quinine, (20 grs.,) and repeated in doses of 5 to 10 grains every 3 or 4 hours until 35 or 40 grs., are taken. The medicine should be so regulated, that the last dose may be taken 2 or 3 hours before the expected paroxysm. I have never seen a chill or cold stage recur after 40 grs. of Farr's quinine had been retained. Although the patient may be generally considered out of danger when the paroxysms have been arrested, yet I esteem it to be good practice to prevent relapse, by placing the patient on a gentle alterative course, and to repeat the quinine in diminished quantity for several days thereafter.

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ART. V.—*On Granular Ophthalmia.* BY JAMES BLAKE, M. D., F. R. C. S.

OF all the forms of disease which present themselves, there is none which has more tried the patience, and been a source of greater anxiety to the members of the profession practising in California, than Granular Ophthalmia. That a slight amount of pathological change in so small a portion of the mucous membranes as that which lines the eyelids, which, however important as connected with an organ of one of the senses, yet can exert but a very slight influence on the normal functions of the system—that a slight change in this membrane should resist, for weeks and months, all the means our art can bring to bear on it, is a fact which, whilst it calls for our deep regret, yet at the same time is suggestive of the necessity of new researches for elucidating this interesting department of pathology.



In submitting the results of my experience on this subject to the profession, I do so more with a view of exciting a spirit of inquiry amongst its members in this State, than from considering the facts I have to bring forward as in themselves of any great importance. That the disease we are now investigating is one on which the marked peculiarities of our climate exert so decided an influence that it may, in fact, be considered an endemic among us, none will deny; and I have no doubt but that its investigation will open up to us an interesting field which, with careful research, cannot fail to yield a rich and useful harvest. Analogy would lead to the opinion, that the climate of California must be peculiarly obnoxious to diseases of the eye. The months of uninterrupted sunshine, the extreme dryness of the air, the sudden transitions between the heat of the days and the coolness of the nights, and the quantity of dust floating in the atmosphere, are characteristics of our climate, which, in whatever part of the world they prevail, have always been found to exert an injurious influence on the organ of vision.

Before proceeding to investigate the pathology of granular conjunctivitis, it will be desirable to give a short notice of the influence which each of these atmospheric peculiarities may exert on the eye, at least in so far as our present knowledge may enable us to explain the pathological phenomena they are likely to produce. If, from such an investigation, we can trace the direct causation of these phenomena by any one of these atmospheric peculiarities, or even from their combined action, an important object will have been gained; but even should such an investigation merely furnish us with negative results, it will not have been undertaken in vain, as attention will then be directed to other causes to explain the morbid phenomena we are investigating.

And first, what is the direct effect produced on the eye, by the great dryness of our atmosphere during the summer months? From a surface constantly kept moist, as is the conjunctiva, it is evident that a much greater quantity of fluid must evaporate when it is exposed to an atmosphere containing not more than twenty or thirty per cent. of the vapor it can dissolve, as is often the case here, than when the atmosphere contains two or three times as much vapor, as it generally does in the eastern States. By this increased evaporation, only the aqueous portion of the secretion of the lachrymal gland is removed, leaving that portion which remains on the eye in a much more concentrated state, as regards its saline elements. It is highly probable that this increased concentration of the tears may act as a source of irritation to the conjunctiva. This, however, is obviated to some extent by the increased secretion of the lachrymal glands, but still there can be no doubt but that the conjunctiva must be moistened by a fluid containing more saline ingredients than in moister climates. Another effect produced by this greater evaporation is, that the surface of the eyeball is kept at a lower temperature by many degrees, probably ten or fifteen, than it would be, did the air contain more moisture. These are the physical effects which are the inevitable result of the condition of our atmosphere. As will be seen in the sequel, they have, I believe, little or no influence as direct causes of the disease we are considering, but their action is undoubtedly felt in some of the complications with which it is too frequently associated. There can be no doubt but that the months of un-

interrupted sunshine, which characterize our summers, must tend to produce an injurious effect on the eye—an effect which, although influencing directly the retina, yet most frequently makes itself manifest by irritation of the conjunctiva. The sympathy between the retina and the mucous membrane covering the eye and lids is so intimate, that even before the retina is sufficiently affected by the action of a strong light to offer any morbid symptoms, the ocular and palpebral conjunctiva is frequently in a state of inflammation; and I believe that in these cases, the membrane lining the lids is more affected than that covering the eyeball, so that the bright, clear and cloudless atmosphere of our summers must exert a most injurious influence on the disease we are now investigating. The great difference in the temperature between the days and nights during the warmer season of the year, is also an injurious element which produces its effects on the eye by the catarrhal state it induces, and which tends to give rise to those frequent relapses so constantly met with whilst treating this granular ophthalmia. The effect of the dust with which our atmosphere is so generally loaded in the dry season, can be but mechanical, and will tend to excite inflammation in the conjunctiva, and to oppose a serious obstacle to subduing any morbid condition of it.

Such may be considered to be the most marked peculiarities of our climate as regards diseases of the eye, and as far as our present knowledge of pathological causation will guide us, they may all be regarded as producing simple or catarrhal inflammation of the conjunctiva. In order, however, to judge in how far they may be concerned in the production of granular ophthalmia, we will endeavor to point out what we consider to be the essential character of the disease. By most authors, and, in fact, I believe, by all whose works I have had an opportunity of consulting, the formation of granulations on the palpebral conjunctiva is looked upon as one of the results of inflammation of that membrane, carried to a point which leads to the effusion and organization of lymph in the papillæ, with which the membrane is covered—this organization being the result of inflammation in a manner analogous to that in which we find the same product thrown out and organized in the pleura and peritoneum when these membranes are inflamed, the effusion, however, in the case of the eye, taking place in the substance of the mucous membrane.\* The disease, however, as far as my observation is concerned, is not dependent merely on inflammation of the conjunctiva, nor are the granulations which form on the lids to be considered as the result of organized lymph poured out during the progress of inflammation. Before I arrived in California, I certainly had never seen a case of the disease in which inflammation of the conjunctiva had not preceded their formation; but since I have been in this country, I have met with cases of granular conjunctivitis, as it is called, in which the disease has gradually gone on developing itself until granulations were formed, without giving rise to any of the appreciable signs of inflammation, such as always show themselves when the conjunctiva is the seat of this process; and although in by far the larger number of cases, granula-

\* In a work recently published by Siehel, he has so far modified these views, as to assert that the granulations are not caused by individual papilla, enlarged by portions of mucous membrane raised up by lymph effused beneath it.

tions on the lids are either accompanied or preceded by inflammatory symptoms, yet I believe it will be shown that, in these cases, the inflammation must be looked upon as a complication rather than as the exciting cause of the disease. The simplest and most idiopathic form in which the disease has presented itself to my observation, has been in cases in which, from the first, there is no sign of inflammation either of the ocular or palpebral conjunctiva. The first symptom perhaps noticed will be a prominence of the semi-lunar fold of the conjunctiva, which is found standing out quite prominent along the internal side of the eye, as large as a straw or small quill. On touching it, it is found to be hard and fleshy, as if its increased bulk was owing to the deposition of fibrin within the fold. The surface of the membrane does not appear affected; there is no increase of the natural secretion, and although it is of a bright scarlet color, this color has more the appearance of being caused by ecchymosis beneath the mucous membrane, than by any inflammation of the membrane itself. If not checked, this redness gradually extends itself over the surface of the sclerotic, more in the form of a bright scarlet ecchymosis, than with the character of the darker vascularity that is found in inflammation of the conjunctiva. This membrane, in fact, appears not to be at all affected—there is no amount of infiltration, no thickening, no increased secretion, no lachrymation, and there is, at the same time, a total absence of those subjective symptoms which usually accompany inflammation—the patient often experiencing not the slightest inconvenience, no sensation of sand, no intolerance of light, no heat or pain in the eye, and this at a time when the sclerotic is no longer visible, owing to the scarlet ecchymosis extending over its surface. So slight is the thickening of the conjunctiva, that there is scarcely any elevation of it to be perceived at the edge where it leaves the sclerotic to pass on to the cornea. We have seen cases in which the disease has gone on developing itself in this quiet way for weeks, the patient complaining of nothing but a slight increased flow of tears.

Should the disease continue its progress, the eyelids now become involved, the same bright subconjunctival redness is noticed gradually extending over the inner surface of the lids, but here, particularly in the upper lid, its character becomes modified from a difference that exists in the anatomical structure of the parts involved. Owing to the firmer attachment of the palpebral conjunctiva to the lid, the effusion of lymph does not take place so uniformly as over the sclerotic; portions of the mucous membrane are elevated as if they yielded more readily than the intervening spaces. These prominences present, at first, a rounded appearance, scattered over more or less of the inner surface of the lid, but seated on a continuous base, which appears redder than the healthy conjunctiva—the prominences themselves being redder than the intervening spaces. As soon as the disease has reached this stage, inflammation of the conjunctiva is sure to supervene, undoubtedly owing to these elevations acting as foreign bodies between the eyeball and the lids.

Such, I believe, may be considered as the history of a pure, uncomplicated case of the disease—a form, however, in which it is rarely met with. In but two instances have I seen cases in which it has proceeded so



far as to give rise to granulations without inflammation of the conjunctiva supervening. In by far the larger number of cases that present themselves, we find the conjunctiva in a state of inflammation, with all its accompanying symptoms, attention either not having been called to the disease until the conjunctiva became affected by some superinduced inflammation, or the disease itself taking its start in an eye already the seat of some form of conjunctivitis. The peculiar, essential pathological element of the disease appears to be the deposition of lymph under the conjunctiva, a process not necessarily producing any pathological change in the conjunctiva itself, until the deposition takes place in a part where it acts as a mechanical irritant to the eye.

Should this view of the pathology of the disease be correct, we can not trace it as the direct result of any of the atmospheric sources of irritation peculiar to our climate, although there can be but little doubt that the peculiar state of the system, favorable to its development, is the result of climatic causes, for wherever we find the disease endemic, there analogous climatic influences are known to exist. Nor is it only in this form of ophthalmia that we can trace the effects of the peculiarities of our climate. The peculiar proclivity observed in this country to diseases of the genito-urinary organs—particularly in females—the tendency to diseases of the pharynx, are, I think, to be sought for in some analogous state of the system as the result of climatic influences. Admitting the above views on the etiology of granular ophthalmia to be correct, they will exert an influence on our treatment of the disease, for although it is not possible, in the present state of our knowledge, to detect the exact nature of that state of the system which is required for its development, yet our attention should not be so exclusively directed to the local phenomena it presents, nor shall we be led solely to direct against it those remedies, which are of acknowledged efficacy in the treatment of simple inflammations of the conjunctiva. Many eyes, I am confident, have been destroyed by the use of remedies, which, in cases of simple inflammation, would have been proper, but which have tended to aggravate the disease by leading to the deposition of more lymph and the formation of new granulations. I have seen cases, in which granulations, existing on but a small portion of the lid, and giving rise to but little irritation, have been much aggravated by the use of escharotics. Violent inflammation of the conjunctiva is thus produced, and this has been followed by the formation of granulations over the whole lid. The treatment that I have found most useful is to ascertain, in the first place, what is wrong about the system, and, as a general rule, the indications will be for the administration of tonics, except in those cases in which the inflammation of the conjunctiva is so violent as to give rise to irritative fever. When this is the case, blood should be taken from the temples, soothing applications made to the lids, and saline medicines or tartar emetic may be required. This treatment, however, must be pursued with caution, remembering that its object is merely the removal of one of the complications of the disease; before we can hope to produce absorption of the granulations, the opposite course of treatment will probably be required, and it will be found that here, as well as in other parts of the body, morbid deposits can, as a general rule, be best removed by strengthening the system. The local applications I have found most

useful, have been the acetate of lead and tannin; solutions of these may be used of different degrees of strength, according to the state of the lid, and although objections have frequently been brought forward to the employment of saturnine solutions in diseases of the eye, yet I have never had to regret having used them in affections of the lids, although I have frequently had recourse to a saturated solution of the acetate, and have continued its application for days together. There is, however, one form of the disease in which escharotics may be used with advantage, and that is where the granulations are few, and have assumed a chronic form, and when, from their small bulk, they produce but little inflammation of the conjunctiva. In this condition they will often remain for months and sometimes for years, if left to themselves. By touching the granulations lightly with sulphate of copper or lunar caustic, a slight amount of inflammation is produced, which favors the subsequent action of astringents in removing them. The action of the caustic must, however, be confined as much as possible to the points of the granulations.

Before concluding, I would call attention to one of the most distressing complications which are met with in this disease. I allude to the neuralgic pains in the forehead and orbit, which too frequently present themselves, and which are, undoubtedly, often connected with that tendency to neuralgia which exists in so marked a degree in this State. Should the nature of these pains not be understood, great mischief may be done by mistaking them for pains of an inflammatory origin, and as instances have presented themselves in which this mistake has been made, I have thought it well to allude to the subject.

In publishing these few remarks, I have not attempted anything like a systematic treatise on granular conjunctivitis, nor of the various complications with which it is so often associated. These are, in most instances, of an inflammatory character, and must be met by the means generally found useful in subduing inflammation, remembering, however, that the disease is something more than inflammation; and even when using our local antiphlogistic remedies, it may, at the same time, be desirable to support the system by tonics and good diet.

My principal object has been to suggest what I believe to be more correct views as to the pathology of this obstinate disease—views, however, which I have not had an opportunity of corroborating by post-mortem examination—but even should they not prove correct, I am certain that the course of treatment they suggest will be found most useful in combating the disease. — *California State Medical Journal*.

ART. VI.—*Dysentery*. By S. P. CRAWFORD, M. D., of Greenville, Tennessee.

DYSENTERY has been the prevailing disease in this locality during the summer and fall months, for the last four or five years, commencing in June, reaching its acme in August, and disappearing in October. There being nothing in the various localities to indicate a specific cause, or an

endemic influence, I have been forced to the opinion that the disease was of an epidemic nature, depending upon some peculiar *constitutio aëris* or condition of the atmosphere. From the time of its prevalence, it might be inferred that it originated from the heat of summer, if it was not from the fact that the disease does not prevail in the same neighborhood or the same families each succeeding year. One year it will appear in a neighborhood four or five miles in extent, in which all the families are attacked with but few exceptions; the next year the adjoining neighborhood in a similar manner will be attacked, with here and there a case in the locality of the previous year. In this way the disease has been wending its way until it has now been in every corner of the county. In this place (Greenville) the disease has never been general, a few cases occurring every year, until the present year, the disease has been more general, the inhabitants of the town suffering more than the country.

Ten years ago the disease was seldom heard of, an occasional isolated case occurring, which was of but little interest to the practitioner. To how small an extent of territory an epidemic may be confined, how long it may last, or when it will prevail, are matters about which I know nothing. That the heat of summer and locality had something to do in aggravating or mitigating the severity of the disease, I am fully convinced; but that it originated in one or the other of these causes or both combined, forming an *endemicity*, my observations do not justify any such conclusions. Some other cause must be sought, and this cause amounts to a *non causa pro causa*, and is expressed in the word *epidemic*, and for the want of better information we grow *wondrous wise* when we repeat the word.

*Symptoms.*—The disease frequently commenced with diarrhoea, pain and soreness in the bowels, followed in a few hours with tormina and tenesmus, which were generally taken as the first symptoms of flux by the patient. The stools become at this period very frequent and small, being nothing but mucus and blood. High fever, pain in head, back and limbs, were simultaneous with the dysenteric discharges. Sometimes the discharges were dysenteric from the beginning, followed by the usual symptoms without previous diarrhoea. The disease was undoubtedly an inflammation of the mucous coat of the rectum, extending frequently the whole length of the colon. A pseudo-membranous substance was frequently discharged from the bowel not unlike the mucous coat of that organ, and by some was regarded as the coat itself. This membrane would form and be discharged in four or five days from the commencement, if the disease had not been mitigated from its onset; but more generally it was found in lingering cases. The duration of the disease was about ten days; some cases assuming about this time a typhoid condition, lasted four or five weeks, and hence the disease was thought by some to be typhoid fever.

The disease I never thought to be contagious; though to be exposed continually to the contaminated air of a sick room was very apt to produce it, and but few members of a family escaped where the disease was once established.

*Treatment.*—Contrariety of opinion prevails as to the best method of treating dysentery. Some recommend the drastic cathartics, others the



milder aperients, others sedatives; each urges the claims of his favorite compound with an unshaken confidence. And among others, I beg the impudence of coming before the public with my favorite prescription, not in the way of a quack, for it is no secret; not in the way of a patentee, for it is no invention; not as something new, for it is old. Every man knows, who knows anything about medicine, that a *panacea* is the vilest imposition, or a remedy to meet a single disease in all its stages in every constitution is not to be found, and no wise man would look for it. The treatment I gave dysentery comes as near meeting all the cases as anything I remember to have tried in this or any other disease.

*Opium is the remedy.* Rest to the inflamed bowel is the main and important thing in curing the disease. Every time the bowels act, the irritability of the organ is increased, until a desire to go to stool is constant, a high degree of inflammation soon follows, extending more or less to the upper bowels. The first thing I do, if I find the bowels have been freed of fecal matter by diarrhoea or cathartics, is to administer a full dose of opium.

If there be much thirst and fever, ipecac is added. Dose for an adult, pul. opii. gr. ij, ipecac grs. ij, creta. prep. gr. 10, mixed with simple syrup. With this I confidently expect rest to the bowels four or five hours; at the end of this, if the discharges are still dysenteric, I give castor oil, after its action I repeat the dose in increased quantity, if circumstances permit. In a large number of cases, three or four doses was all that was required to effect a cure.

By giving rest to the bowels four or five hours, I confidently expected fecal discharges when the effect of the opium would pass off, and in a majority of the cases this was the case. It was only necessary to repeat the dose to prevent the discharges from becoming dysenteric, which they would soon do if not quieted by a second dose. The disease is cured by rest, and not by the opium or anything else that may be taken into the system. I find, in looking over my note book, that out of 297 cases treated by me, in the last four years, that 20 were treated in this way and all recovered. Where there is little or no fever I dispense with the ipecac. Many cases though, in spite of treatment, assumed a grave typhoid condition; and the fatal cases that occurred in my practice were of this type. Of the 97 cases, many of them were in a low or typhoid condition when I first saw them, or were complicated with other diseases so as to prohibit the use of opium. The typhoid cases I treated with a mixture of turpentine, laudanum and gum arabic, and I was well pleased with its effects. My first object was to procure fecal discharges by the mildest cathartics, in all cases where there had not been diarrhoea. So much then for dysentery and its treatment.

I claim no new discovery of my own; I only ask for the remedy a recognition of the position it so justly merits in curing this disease, where it has been placed long before my time by older and better hands than mine. I claim for it in this locality a superiority over every single and compound prescription in the treatment of dysentery that I have ever tried—*jeu ai bien de la joie*.—*Nashville Jour. Med. & Surg.*

ART VII.—*Cholera Infantum*. [Baltimore Pathol. Soc. Reported by  
Dr VAN BIBBER, Virginia Med. and Surg. Jour.]

DR. BUCKLER had heretofore considered cholera infantum entirely a functional disturbance; but since the point had been discussed in this society concerning the minute anatomy and functions of Peyer's glands, or follicles, which he had always found on dissection enlarged in this disease, he was not certain that it might not be an organic lesion. He had consulted on this subject various authorities—as West, Todd and Bowman, and Carpenter. Some of these considered the follicles shut sacs, while others had discerned their open mouth. Might they not be open at one period of life, and closed at another? At any rate, if organic lesion existed, it was to be looked for in these glands.

Dr. Roby said, concerning the situation and anatomy of Peyer's glands, he would repeat that he could not receive Dr. Carpenter's authority without an investigation.

In the last edition of his Physiology, Dr. Carpenter described these glands as situated on the side of the intestine which is attached to the mesentery. Dr. Roby said that his own observation would warrant the assertion that this was an anatomical blunder—that the glands are situated on the *free* border of the intestine, opposite its attachment to the mesentery.

Dr. Johnston made the following remarks:

These glands of the intestinal canal may be arranged in three groups, according to their anatomical constitution.

1st. The simple mucous pockets or follicles of Lieberkuhn, existing from the pylorus to the anus, with little variation except in size, being somewhat deeper or longer in the thicker mucous membrane of the large intestines.

2d. The racemose glands of Brunner, or those having a branching duct, around the terminal twigs of which are arranged certain vesicular cells, opening directly and without pedicles, but with a wide opening, just as the vesicles of the lungs open into the finer bronchi. These glands occupy the duodenum.

3d. The follicular glands, or those of which the essential element is a completely closed chamber or follicle, composed of a delicately fibrous vascular capsule, with grayish contents, containing granules, and pale cells resembling lymph corpuscles. In the jejunum especially, the follicles occur singly. These are the *isolated follicles*. In the large intestine there are solitary follicles, differing from the others only in their greater size. And finally, in the ileum, occasionally in the jejunum, and very rarely in the duodenum, the follicles are associated in groups or patches, from twenty to thirty, or even sixty in number. These are the so-called patches of Peyer. Each follicle lies under a *pit* in the mucous membrane, which does not quite reach the follicle, and therefore is not its duct. The function of Lieberkuhn's glands is undoubtedly the secretion of mucus. Of Brunner's glands, but little can be said, owing to the almost impossibility of isolating their secretion. Much conjecture has been hazarded on the subject, among which may be advanced the supposition that they secrete a fluid similar in its nature and uses to the saliva. The most interesting, in a physiological point of view, are

the patches of Peyer, but unfortunately, of them also but little is positively known, either as to the nature or manner of their secretion. They are *always situated along the free side of the intestine, opposite its mesenteric attachment*. The follicles of the patches are perfectly closed capsules, like those upon the splenic arterioles. If they emptied themselves into the intestine by *bursting*, ruptured capsules would occasionally be found, which has not yet happened either in man or the lower animals. The most probable idea is that of Brucke, of Vienna, who, finding the follicles closely surrounded by lymphatics, which he was unable to trace into their interior, and discovering a near resemblance in the semi-fluid contents of their cells, advanced the hypothesis that they may be appendages to the lymphatic system, and be concerned in the secretion of lymph. In fact, the elements of the lymphatic glands are also closed chambers.

Dr. Buckler made the following observations on the treatment of this disease:

During the first stage—say the first twenty-four hours—when the access of the disease is sudden, the vomiting and purging are almost incessant, with alarming prostration. Acetate of lead in 3 grain doses, with laudanum or morphia; restoratives of all kinds to obviate syncope; sinapisms; small quantities of iced water; light clothing and a cool situation for the patient; and endeavor to obviate collapse by cordials and mild stimulants.

The treatment thus recommended involves a principle which he thought important. The patient, as thus described, is in a state of spurious hydrocephalus; the blood has stagnated in the brain, from the deficiency or prostration of the circulation; and this practice is to be preferred to that sometimes adopted, of leeches to the temples and pounded ice to the scalp. This latter course of treatment Dr. B. thought injurious. Subsequently, he gives small doses of calomel with chalk; applications of tepid water to the stomach and head; lime water with the nourishment; and the lime water, if continued, will certainly change the discharges from the grassy green to a more healthy color.

The question of removal then arises, and the sea shore is to be preferred, if practicable; but any change, even to another house in the same city, or from a house with east and west exposure to one with north and south, is beneficial.

Dr. Williams said that he had heard Trousseau recommend raw meat to be given to children.

Dr. Miltenberger had had much experience with the raw meat diet. He recommends a beef-steak to be placed on a plate, scraped with a strong knife and seasoned with salt, when it is often very acceptable to the child.

Dr. Frick advised that it be prepared with distilled water, a few drops of muriatic acid and caramel, according to Liebig's recipe.

Dr. Van Bibber said that during the past summer he had tried the *carbazoic acid*, when the acute symptoms had subsided, and a tonic seemed to be indicated, and with such success that he could recommend the remedy. He gave one drop of the saturated alcoholic solution, every four or six hours, to a child one year old, and generally associated with *oleum marui*.



ART. VIII.—*Varieties of Thrush; its progress and duration.* Translated from the *Journal de Médecine de Bordeaux*, for the N. O. MEDICAL AND SURGICAL JOURNAL. By J. P. BARBOT, Apothecary.

*Infantile Thrush* by Dr. Lebarillier, physician to the Bordeaux Foundling Hospital.

(Continued from page 540.)

THRUSH does not always assume the same form; there are several varieties. I have divided it into classes, distinguished from each other by the condition of the digestive canal; which condition has been my starting point in these divisions.

When the essential and characteristic symptom, the cryptogamous production, is not accompanied by intestinal derangement, thrush is simple. This form may be discreet or confluent—with or without *erythema*.

Thrush with *enteritis*, as its name indicates, is the form in which the bowels are affected. In this form, *enteritis* and *erythema*, most often supervene rapidly after the first appearance of thrush.

Thrush	{	Simple or without <i>enteritis</i> ;	{	discreet, or confluent.
		with <i>enteritis</i> ;		preceded by <i>enteritis</i> ; followed by <i>enteritis</i> ; appearing with <i>enteritis</i> .

The above are all the principal varieties that we admit in our essay, and an acquaintance with them is useful in *prognosis*.

Which of these varieties is the most common? In Bordeaux, out of 350 children attacked by thrush, 280 had no diarrhœa. In Marseilles, out of 405 children, M. Seux found 305 without any diarrhœa. M. Seux's observations and mine united, show that in 755 cases of thrush, there were 585 cases of simple thrush and 167 of enteritic thrush; which would lead to the supposition that the former form is more frequent. Such, however, is not Valleix's opinion, who having observed only 24 cases, all of them with *enteritis*, naturally concludes that thrush is always symptomatic of an affection of the bowels.

Simple thrush, or thrush without *enteritis*, may assume two forms. It may be discreet (*discret*) or confluent.

*Simple discreet Thrush.*—In this form, the child's tongue exhibits at first an erythematous redness, and the *papillæ* are more developed, especially at the tip. A day or two and even a few hours after, there appears on the *dorsum* of the tongue, some white, curd-like, isolated points, adhering closely to the mucous membrane, from which they cannot be detached. Sometimes, though rarely, these granulations increase in

number and size on the tongue, without spreading to the parts adjacent. Most generally, they extend to the palatine arch, the internal surface of the cheeks, to the gums and lips, where they form a white border. These granulations increase in size, become lenticular in shape, appearing like white plates (*plaques*) particularly in the cheeks and palatine arch. That portion of the mucous membrane, which is not affected is bright scarlet. If the eruption does not extend beyond the *velum palati*, the child continues to suck, digestion goes on regularly,—there is neither heat of the skin nor febrile action. In the course of three or four days, the lenticular plates come off in the order of their first appearance, and that part of the mucous membrane to which they had been attached appears of an intense scarlet. It recovers its normal color but slowly. New granulations sometimes succeed the first, and, if so, follow the same course. Often, at the last period, slight *erythema*, appears on the margin of the *anus*, on the *nates* and thighs. When this *erythema* appears it prolongs the duration of the disease, which without it, lasts generally from four to six days.

Here are three cases in proof :

Case I.—Boy Beynet, five days old, good constitution. On the 13th June, the edges of the tongue were dotted with red spots. 14th. A few thrush spots appeared on the tongue. No *erythema* nor diarrhœa.

16th.—Thrush has developed itself. 18th. It comes off. 19th. Second appearance of thrush spots ; these spots are less distinct than at first. 21st. They come off. 24th. There remains no more traces of them.

Case II.—Boy Escolom, nine days old, good constitution. May 19th. Development of lingual *papillæ*. 21st. Thrush appears on *dorsum linguæ*. Neither *erythema* nor diarrhœa. 24th. Thrush has spread to the internal surface of the cheeks and lips. 25th. Begins to drop off. 28th. Scarcely any traces of spots. 29th. Child quite well.

Case III.—Boy Raffin, three days old, fair constitution. May 27th. Lingual *papillæ* slightly developed—mucous membrane, red. 28th. Thrush appears in spots on *dorsum linguæ*. Neither *erythema* nor diarrhœa ; child sucks well. 29th. Thrush is developed. 31st. Thrush, without being confluent, appears all over the mouth. June 2d. Thrush drops off ; there is neither *erythema* nor diarrhœa. 6th. Has a green stool, slight *erythema* on *nates*. 10th. *Erythema* seems to be paler in color. 13th. *Erythema* has disappeared ; thrush has also disappeared.

*Confluent Thrush*.—In this form, the thrush-spots and the small white lenticular plates, instead of remaining isolated, spread out, approximate together and soon form a white membrane which covers the whole buccal cavity. Consequently, the tongue is surrounded by a membraniform sheath which renders suction almost impossible. Still deglutition is easily

performed in most cases. In this variety, thrush is usually accompanied by restlessness, heat of the skin and febrile action.

*Erythema* is more distinct and more frequent than in the preceding form. The membranous plates come off more slowly. The mucous membrane is of a brighter scarlet. Frequently, there is a second and a third appearance of thrush spots, but of lesser intensity, and the child's mouth returns slowly to its normal condition.

This form rarely terminates fatally. M. Seux has observed several cases. Its mean duration is from fifteen to twenty days.

I will here call particular attention to a variety of confluent thrush of a very serious nature, since it carried off six children in whom I noticed it. It attacks delicate children in preference. This form of thrush appears like the preceding; it is generally very confluent; the little patient's countenance becomes very pale and assumes a clay-color. The cryptogamous production in this form, is of a saffron-yellow color, even before vomiting supervenes; in the course of two or three days, it becomes hard and black like the fuliginosities that cover the gums in typhoid fever. This form is attended by heat of skin, quickness of pulse, and almost always by vomitings. The child can neither take the breast nor swallow any liquids. In four cases out of six, there is enteritis. In other cases there is constipation. The pulse falls, the countenance is contracted, and death always ensues.

Case IV.—A boy, two days old, with strong constitution, with a hare-lip extended as far back as the *velum palati*. June 30. Lingual papillæ are developed. July 1st. A few spots appear on the *dorsum lingua* and in the mouth. 2d. Thrush is confluent. The mucous membrane is intensely red. There are no spots on those points of the nasal mucous membrane laid open by the congenital division of the palatine arch. The mouth is dry. 4th. The child takes the breast with difficulty; diarrhœa is pretty bad; *erythema* on *nates* rather slight. 5th. Buccal mucous membrane is dry; the child cannot swallow. Thrush spots become black. Countenance is pale, eyes are circled with black. 6th. Child dies.

*Thrush with Enteritis*.—In this variety, enteritis may appear before, with, or even after the disease. These different stages deserve a particular description, and as thrush followed by enteritis is the most common, we will begin with it.

*Thrush followed by Enteritis*.—In this form, thrush follows its usual course, and if it be *discreet*, the intestinal derangement is usually slight. Two or three days after its appearance, the child has a slight diarrhœa, which almost always disappears with the thrush. Little heat of skin, slight febrile action.



This diarrhœa which is always greater or less in proportion to the degree of confluence of the cryptogamous production, becomes intense if thrush invade the whole buccal mucous membrane. The skin is pale and hot, the child has fever, and often vomits. It refuses to take the breast. Deglutition is more or less difficult. Diarrhœa follows the stages of the disease. It may cease before the disappearance of the latter or continue some time after ; it then constitutes a morbid condition which often terminates fatally.

Case V.—Boy Lafomcherie, seven days old, good constitution. May 28th. Tongue is red, and *papillæ* are developed. 29th. Thrush appears on *dorsum lingue* ; child sucks well ; no *erythema* ; no diarrhœa. 30th and 31st. Thrush is developed without diarrhœa. 4th June. Begins to drop off. 5th. Two liquid, yellowish stools. 6th. scarcely any thrush ; diarrhœa very severe, without *erythema*. 7th Diarrhœa less intense, slight *erythema* on the *nates*. 9th. Neither *erythema* nor diarrhœa ; thrush has entirely disappeared. 16th. Purulent ophthalmia appears in both eyes.

We will not continue our observations in this case, as, during the course of this purulent ophthalmia, this little patient showed no symptoms having any relation either to thrush or *enteritis*, the only diseases we wished to study.

When diarrhœa appears at the same time with confluent thrush, it is much more serious. The fever is intense, vomiting is frequent. The child is for several days unable to swallow anything ; he loses flesh.—*Erythema*, sometimes simple, sometimes papular, appears on the *nates* and thighs.

In this and the preceding form, I have rarely observed the ulcerations of the malleola and heels, mentioned by MM. Valleix and Seux. This variety is often fatal. In a majority of those cases which terminated favorably, the disappearance of the symptoms of enteritis and thrush coincided with the appearance of an intense papular *erythema* on the neck and chest. This *erythema* lasted from 12 to 20 days and was followed by complete resolution.

Case VI.—Boy Niolet, one day old, admitted August 20th, good constitution, weighs 3 kil. 700 grammes, (about 8 lbs.) 22d. Tongue is red, particularly at its tip and along its edges. 23d. A few spots appear on the tongue. 24th. Thrush is developed and spreads to the parts adjacent. 25th. Thrush is confluent and has a slight yellowish tinge ; child has not vomited yet ; buccal mucous membrane and gums have completely disappeared under a coating of thrush ; tongue is enveloped with it as with a sheath ; child cannot take the breast ; slight *erythema* around border of *anus* ; no diarrhœa. 26th. Thrush has spread to

pharynx ; child vomits frequently. 27th. Thrush begins to drop off ; mouth is less dry ; child can take a little milk ; vomiting is less frequent ; there is no diarrhœa. 29th. Thrush come off in plates ; child takes the breast ; has neither diarrhœa nor vomiting ; on the anterior part of the neck appears a papular and erythematous eruption. 30th. Thrush continues to drop off, though papular *erythema* still remains. Sept. 5th. Child is entirely well.

If enteritis precede thrush, it may present two forms :

1st. Child has at first slight diarrhœa, followed in two or three days by the appearance of thrush, when the diarrhœa and thrush will assume their characteristics in the preceding cases. If there be marked confluence of thrush and excessive diarrhœa, this form will be attended by pallor, heat of skin, febrile action and even vomiting or regurgitation, if thrush invades the pharynx. If all those symptoms disappear slowly, the child will recover ; but if the enteritic symptoms increase, the child may succumb to the disease.

2d. Patient shows symptoms of serious enteritis, characterized by fever, vomiting, *mitéorisme*, free diarrhœa. In the course of eight or ten days, often later, whilst patient is enfeebled by intestinal inflammation, some thrush spots appear on the tongue and gums ; in this case, these spots have not the salient and lenticular appearance of thrush when it appears at the outset. It would seem as if it had not sufficient strength to develop itself. It drops off and reappears several times in the course of the disease, but always with same characteristics.

Case VII.—Boy Bonneau, five days old, strong constitution. May 4th. Has thrush *predromata* ; redness of buccal mucous membrane and development of *papillæ*. 6th. Thrush appears in numerous points on the tongue. 7th. It is confluent and extends all over the mouth ; slight *erythema* ; diarrhœa ; takes the breast readily. 8th. Child vomits breast-milk ; regurgitates often ; thrush spreads to the pharynx. 9th to 12th. Thrush begins to drop off ; frequent green stools ; *erythema* on the *nares*. 14 to 16th. Child refuses the breast ; diarrhœa is abundant and stools watery. 17th. Stools less frequent, child takes the breast. 19th. No stools ; *erythema* decreases ; slight dry cough. 20th. Thrush has entirely disappeared ; no more diarrhœa ; slight ulceration on palatine arch, on the median line and back ; child takes the breast readily. 26th. Ulceration is cicatrised.

Case VIII.—Boy Serre, four days old, puny, weighs 3 kilo. 200 grammes. June 2d. Has several green stools ; tongue red and dry. 3d. A few thrush spots on the tongue ; green stools continue, no *erythema*. 4th. Thrush spreads to base of tongue ; still green stools. 5th, 6th, 7th and 8th. Thrush seems stationary ; stools still frequent. 9th. Thrush

is developed ; several stools. 10th. Begins to drop off ; frequent stools ; no *erythema*. 12th. Thrush has entirely dropped off ; no stools. 13th. Child cured.

The above is a serious form of thrush ; it is the same that was so well observed and described in 1838 by M. Valleix ; which led him to consider thrush as *enteritis* with peculiar characteristics. He had met with it 24 times in 24 cases.

As these different varieties of thrush appear with or without *enteritis*, we must divide them into two classes : local or idiopathic thrush, confined to the mouth—and symptomatic thrush, which develops itself under the influence of another disease. This is the opinion of MM. Trousseau, Delpech, Rilliet and Barthez. M. Bouchut believes that the development of thrush is due to a general disposition in the individuals. [*sic*. Query ? Idiosyncrasy ? Translator.]

With M. Seux, we hold that thrush never is a local affection. It is essentially due to the same conditions, which, in the circumstances that we have pointed out already, produce a general impoverishment of the whole system. It is a general affection, characterized by special inflammation of one or more portions of the digestive organs. In fact thrush may be confined to the mouth or it may spread to the pharynx, the œsophagus, the stomach and the bowels. In the greatest number of cases, thrush is idiopathic, as enteritis follows the appearance of the cryptogamous production instead of preceding it.

To show the importance of diarrhœa and *erythema*, which symptoms most frequently attend thrush, I subjoin the result of my observations in 50 cases.

ERYTHEMA.

1st. Number of children that have exhibited no <i>erythema</i> , either before, during or after thrush.....	20
2d. Number of those in whom <i>erythema</i> preceded the thrush spots....	3
3d. Number in whom <i>erythema</i> appeared after thrush.....	23
4th. Number in whom <i>erythema</i> appeared after thrush had left.....	4
Mean duration of <i>erythema</i> , 3 days.	50

DIARRHŒA.

1st. Number of children that had no diarrhœa.....	25
2d. Number in whom diarrhœa and thrush appeared on the same day.....	2
3d. Number in whom diarrhœa appeared after thrush spots.....	22
4th. Number in whom diarrhœa appeared after thrush had disappeared.....	1
Mean duration of diarrhœa, 2 days.	50

(To be continued.)



ART. IX.—*On Hysteria, its Hereditary Transmission, and Curability by Marriage.* Translated and condensed from the *Gazette Hebdomadaire de Médecine et de Chirurgie*, Paris, November 21st, 1856, for the N. O. Med. and Surg. Journal. By J. P. BARBOT, Apothecary.

M. BRIQUET, physician to *La Charité* hospital, has studied hysteria by observations made on four hundred and eleven patients under his charge in that hospital, to solve the following problems: Is hysteria a hereditary disease? If it be, what chances are there that children, born of hysterical parents, will themselves become hysterical? What becomes of the progeny of hysterical parents?

"So little attention," says the author, "has been paid to the study of the influence that the parents' health may have on a predisposition to hysteria, that it is not astonishing science should be so backward on this subject. All that is known concerning the above questions is confined to the citing of a few cases of hysterical females, whose parents had likewise been hysterical."

After stating that the ancient medical works contain no opinion on the hereditary transmission of hysteria, the author reviews the more modern writers, Willis, Pounce, Hoffmann, Raullin, Whytt, Cheyne and Loyer Villermay, and finds that, with perhaps the single exception of Foville, they have generally believed in its hereditary transmissibility.

It is true, however, that these authors have been led to admit this doctrine more by inference than by direct observation, more by deduction than by actual experience. It was in this way alone that MM. Gaussail and Gintrac, each of whom, in 1845, wrote a treatise on the subject, admitted the hereditary transmission of hysteria.

Georget, who had seen that, in order to enlighten science on this subject, something else than reasoning by inference or the citation of a few isolated facts was necessary—Georget followed up, in the wards of *La Salpêtrière*, a pretty large number of hysterical cases, and promulgated as a new fact, that experience had convinced him that the near relatives of hysterical women were always either hysterical, epileptic, hypochondriacal, insane, deaf, or blind.

Observations on such a scale are sure to be beneficial. These had proven the connection between hysteria and the cerebral neuroses, and consequently the relation between hysteria and the brain.

But however important to science had been the researches of Georget, they had only led to the simple assertion of a fact yet without proof. It might be objected, that hysterical, epileptic and insane patients are also found among the relatives of hysterical persons.

In order to continue Georget's observations, the author carefully prepared five tables, which he published in detail. In order to prepare these tables, the author carefully noted down in separate tables, when-

ever he could ascertain with any degree of exactness, the "family antecedents" (*antécédents de famille*) of all the patients coming under his charge, whether hysterical or non-hysterical. By family antecedents, the author means a statement of how many of their relatives—fathers, mothers, brothers and sisters—had suffered from hysteria, epilepsy and other neuroses, or of scrofulous diseases.

Table 1: Contains family antecedents of 336 hysterical patients, say 271 fathers, 313 mothers, 307 sisters and 134 brothers, total 1025 persons, giving 189 cases of hysteria, 13 of epilepsy, 10 of insanity, 1 of *delirium tremens*, 1 of *paraplegia*, 3 of somnambulism, 12 of convulsive diseases, and 9 of apoplexy: in all about  $24\frac{1}{2}$  in 100. And as the author could not ascertain positively some cases among the mothers and sisters of the above, he puts down the proportion of relatives suffering from diseases of the nervous centres at 25 in 100, in round numbers.

Table first is contrasted with table second, the result of which we subjoin:

Table 2: Contains family antecedents of 167 women, between 25 years of age and old age, neither hysterical nor suffering from neuroses, who could give any satisfactory account of their relatives' state of health.

These formed a total of 704, say 143 fathers, 166 mothers, 197 sisters and 190 brothers, and showed among that number 11 cases of hysteria, 3 of insanity, 1 of nostalgia, and none of epilepsy; total, 15 relatives suffering from neuroses, or  $2\frac{1}{8}$  in 100. The author then says:—Well, among hysterical families these are in the proportion of 25 in 100. I think the number examined has been large enough to conclude from these tables that there are twelve times more cases of hysteria in hysterical than in non-hysterical families, and to clearly establish its hereditary transmission.

In fact, in the families of non-hysterical women, we find:

1 case of hysteria to 66 members;

1 " insanity to 219 "

and in hysterical families we find:

1 case of hysteria to 5 persons;

1 " epilepsy to 78 "

1 " insanity to 102 "

To obtain simpler and more decisive results, the author contrasts the statistics of the fathers and mothers only, on both sides of the question, and shows that 167 non-hysterical females had 6 hysterical mothers only—or a little less than 4 in 100; whereas, the 336 hysterical patients showed 103 hysterical parents, or a little more than 30 per 100.

No doubt it will be thought strange that so few hysterical persons are found among the parents of my non-hysterical patients, particularly if this fact be contrasted with another also established by me, namely: that out of four women, between the ages of 15 and 60, taken at random among such as are usually found in our hospitals, one is hysterical.

The reason of this difference is owing to the fact that when I made out my statistics on non-hysterical subjects, I only tabulated women above 25 years of age, at which age a woman, who is destined to become hysterical, is generally already so; whereas, to establish a general mean, I was obliged to take persons of all ages.

Thus, we find this very curious and very important fact that hysteria is very rare among the parents of persons not destined to become hysterical. Thence, there would be two classes of women; the non-hysterical class that does not transmit a predisposition to hysteria, and whose children are, in a measure, protected from the causes of that disease; and the hysterical class, predisposed to hysteria—which class of itself furnishes a large portion of the mass of hysterical patients.

In certain families there are hereditary dispositions; certain mothers transmit to their daughters an irritable disposition, a nervous excitability; whereas, others transmit a great equanimity and a *sans-souci* disposition; we have nervous families (*familles de trembleurs*) and *poco-curante* families. To me it is clearly proven, that the predisposition to hysteria depends upon the degree of nervous excitability of the individual. It is not always, as may well be supposed, that the disease itself is transmitted by parents to their offspring, but sometimes the predisposition to it. Thus, there is hereditary transmission, not only when an hysterical mother gives birth to a hysterical daughter, but there is also hereditary transmission when a woman of very excitable, nervous temperament, but who, by a series of fortunate circumstances, has been preserved from hysteria, gives birth to a daughter, who, placed in less favorable circumstances, may become hysterical. Well, I have noticed that these latter cases are more common than the former.

[The author, having established the hereditary transmission of hysteria, next studies, in tables 3, 4 and 5, what influence this hereditary transmission exercises on the development and progress of the disease.—*Trans.*]

Table third exhibits family antecedents of 113 hysterical patients, in whom the first outbreak of the disease was a convulsive fit.

These 113 could give exact information about 98 fathers, 107 mothers, 98 sisters and 57 brothers. Among these near relatives there were 63 cases of hysteria, 5 of epilepsy and 4 of insanity, or a proportion of these latter diseases of  $27\frac{1}{2}$  per 100.



Table fourth exhibits family antecedents of 75 cases, attacked with hysteria at 12 years of age, or puberty.

53 fathers, 70 mothers, 68 sisters and 35 brothers, about whom correct information could be obtained, showed 51 cases hysteria, 2 cases insanity, 3 cases epilepsy, or a proportion of these latter cases, to the mass, of  $24\frac{1}{2}$  per 100.

Table fifth, of 223 hysterical patients, in whom the disease began with simple nervous derangements and progressed slowly.

173 fathers, 206 mothers, 209 sisters and 77 brothers, were tabulated, and showed 126 cases of hysteria, 8 of epilepsy, 3 of convulsions, and 7 of insanity, or 19 per 100 of hysterical, epileptic or insane relatives.

Thus, in the three classes reviewed in these three tables, the influence of predisposition is clearly indicated by the proportions  $27\frac{1}{2}$ — $24\frac{1}{2}$  and 19 per 100.

The above tables also show 98 cases of hysteria in the mothers to 5 only in the fathers; showing clearly and strikingly that in the transmission of hysteria the mother's part is almost sole and entire, whilst that of the father is nearly null. This fact is analogous to that observed by M. Baillarger in insanity—that is, that the transmission of insanity by the mother is more likely to be to her daughters than to her sons.

Whence follows this consequence: that the father's agency is almost passive and the mother's the most active in the transmission of hysteria; *crossing* the constitutions by marriage, (*croisement*) as counselled by Haller and Burdach, to check the generation of hereditary diseases, being totally inefficient in preventing hysteria.

It also appears evident to me that the mother's exclusive privilege of transmitting hysteria to her offspring is due to her peculiarly excitable nervous organization; and as woman alone has this peculiar nervous organization, so she alone can transmit it. Therefore, all prophylactic measures that may be tried hereafter to meliorate the constitution of children, yet unborn, must be tried on their future mothers in early youth, and during their first gestation and delivery.

To observe hereditary hysteria in all its details, let us now see how it is distributed in hysterical families:

My tables show that out of 341 cases of hysteria:

In 166 instances there was only 1 case of hysteria in a family;

In 122 instances there were 2 cases;

In 42 " " " 3 "

In 9 " " " 4 "

In 1 " " " 11 "

and that consequently we do not meet with a number of cases at the same time in hysterical families. It is true though, as we shall see presently, that these families are not ordinarily large.

It must not be supposed that among 166 instances, 1 case only in a family, was due to accidental and not to hereditary hysteria. This would be a great mistake. I have observed in many cases that hysterical girls had mothers of an exceedingly excitable nervous organization, whom the slightest cause would have rendered hysterical also.

Let us now see the effects of hysteria in the parents on their offspring.

It has been known for a long time that MM. Boucher and Cazauvielt have shown that, of 70 epileptic patients under their charge, 23 had had hysterical mothers. It is also well known that very nervous women give birth to ricketty or scrofulous children; but it is not yet known to what extent hysteria in the mother will influence mortality in the offspring.

Here is the result of my researches on this subject:

1st. All the hysterical women under my charge, who had conceived, had, with very few exceptions, had one or more miscarriages. Miscarriages had occurred most frequently in those who had had most frequent hysterical attacks. Some of these women had had as many miscarriages as deliveries. Others had no less than 10 of the former.

2d. 74 of my hysterical female patients had 256 children. 159 of these latter died, either in their first week, or their first month, or their first year; a small number in their second year, and a few in their third year; 95 only lived longer than these periods.

3d. Of those 159 who died as above, 79 died in convulsions.

The general proportion of deaths, in their first year, of children born in our hospitals, is about 25 per 100 on an average; these hysterical women lost, as will be seen, 60 per 100 of theirs—a considerable increase.

Here is the result of my observations as to what becomes of those children who survive:

32 women between 40 and 65, consequently at that age in which they had been better able to watch the rise, progress and termination of hysteria in their children, were observed.

They had borne 149 children; 106 of these had died before the age of 12; there remained but 43 children of this age—23 girls and 20 boys. Of these 23 girls, 6 had evidently been hysterical; some were in delicate health, and the balance were said to be healthy. 10 women had given birth to these 23 viable girls.

I am far from thinking that these lamentable results occur in all classes of society. I believe, and sincerely hope and trust, that the wealthier

classes could show far more favorable results ; but I still believe that even among them the disastrous influence of hysteria is felt, though in a minor degree, it is true.

After having shown the hereditary transmission of hysteria, and its influence on the life and health of children born of hysterical parents, the author then exhibits the result of his researches and observations to ascertain the proportion of chances or risks that those daughters of hysterical parents who survive, have to become hysterical themselves. Here is the result :

Between birth and to three years of age, 60 per 100 of the children of hysterical parents *die* : a part of those who survive, either boys or girls, become rickety, epileptic or scrofulous, and as to the balance of the girls, it is one chance in three but that they will become hysterical.

Since the probabilities are so great that, on the one hand, hysterical mothers will give birth to hysterical daughters, and on the other hand, that these mothers will exercise an unfavorable influence on the life of their children, the marriage of hysterical women becomes, in a measure, a question of public hygiene.

In general, physicians have treated and still treat this matter very lightly ; they advise marriage with incredible ease, some from scientific prejudices, others from want of reflection. The English authors, Cheyne, Connolly and Copland, have taken a more serious view of this matter, and in their fear of *committing a nuisance*, seem to insinuate that by favoring the marriage of hysterical girls, one commits an act, in some measure, injurious to society, and jeopardizing the existence of a being who may at some future time belong to it.

Though we do not carry our ideas of public hygiene and individual security as far as those gentlemen, still, where the probabilities of hereditary transmission of disease, and its pernicious influence on the mortality, are so great, it would be an act of great heedlessness not to take these into consideration, and to expose a future generation to the influences of this actual scourge.

Thus we think that every time that a physician shall be called in to give advice as to the expediency of marrying a hysterical girl, he should be very guarded in his opinion, and not contribute thereby to the bringing into the world of children destined, in all probability, to die very young, or to be afflicted with a serious disease, which they, in their turn, will transmit to their offspring.

In a succeeding number of the *Gazette Hebdomadaire*, the able author combats the precept which has received universal sanction by medical authorities, namely, that marriage is the cure for hysteria. M. Briquet marches down the corridors of time from Hippocrates to Lisfranc, de-



molishing, with his statistical battery, this fascinating and popular dogma, and showing that the influence of marriage is, for the most part, either negative or positively mischievous; in this latter category he refers to a case reported by the learned editor of the *Gaz. Hebdom.*, M. Dechambre. *Un triste adieu*, therefore, to “*qu’une longue infatuation scolastique complètement erronée.*”

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#### ART. X.—On *Hernia*.

I. *Hernia*, by THOMAS BRYANT, Esq., London. [What form of hernia is most common? What form most frequently requires operation? and which is the most fatal? are questions which are constantly asked. To aid in the solution of these questions, 126 fatal cases have been collected from the records of Guy’s Hospital. The conclusions which have been come to from these are as follows:]

*Conclusions.*—1. That *inguinal* hernia is more common than femoral by 77.7 per cent.

2. That *inguinal* hernia most frequently commences between 20 and 40 years of age, and *femoral* between 50 and 70.

3. That the average duration of *inguinal* hernia, prior to its strangulation, is 20 years; of *femoral* 11.

4. That *inguinal* hernia most frequently becomes strangulated before 50 years of age, and *femoral* after this time.

5. That the average age of persons with strangulated *inguinal* hernia is 43, of *femoral* 55.

6. That *femoral* hernia requires operation 25.2 per cent. more frequently than *inguinal*, success in its reduction by the taxis being less frequent.

7. That after operation, *inguinal* hernia is more fatal than *femoral* by 16.6 per cent.

8. That 22 per cent. of cases requiring operation are recent, and are strangulated on the first descent.

9. That three-fourths of these recent cases are *femoral*.

10. That the average period of strangulation in fatal cases of *inguinal* hernia is 50½ hours, of *femoral* 76½.

11. That half the fatal cases of hernia die within 48 hours after the operation, and four-fifths within the first week.

12. That three-fourths of the cases which refuse to rally after operation are *femoral*.

13. That collapse and death after a copious motion is by no means a rare occurrence.

14. That artificial anus much more frequently follows *femoral* than *inguinal* hernia.

15. That the cause of death in cases of artificial anus is generally exhaustion; that death occurs more rapidly when the intestine is slit open at the time of operation, than when the opening in the bowel naturally follows its return into the abdomen.

16. That sudden collapse and death occasionally occur in cases of hernia which have progressed favorably for many days, without any *local* cause.

17. That in about 69 per cent. of fatal cases, peritonitis exists sufficient to produce death; that is to say, lymph in some of its forms is generally effused.

18. That in nine tenths of the cases of hernia, the *ileum* is the portion of bowel strangulated; and in three-fourths of these it is part of the last two feet.

19. That, as a rule, the strangulated bowel, when returned, rests or is fixed by adhesions at the mouth of the sac.

20. That in *all* cases of gangrenous bowel, the affected portion will be found at, if not adherent to, the mouth of the sac.

21. That femoral hernia is more frequently associated with gangrenous bowel than inguinal.

22. That ulceration at the line of stricture is more frequent in inguinal hernia; although the sulcated condition of the bowel is as common in femoral hernia as in inguinal.

23. That faecal extravasation, if not produced by ruptured bowel from the taxis, generally follows ulceration at the line of stricture, and is consequently generally found in inguinal hernia.

24. That ruptured bowel from the taxis is most frequent in femoral hernia.

25. That faecal extravasation does not necessarily follow rupture of the intestine by the taxis.

26. That faecal extravasation does not occur so often as 50 per cent. in cases of rupture or perforation of the bowel.

II. MR. A. BAKER *on Hernia*. It is a point of considerable interest whether it is best to open the sac or not. We should say that whenever the strangulation is recent, and no adhesions of the sac to the tendinous aperture through which it has escaped have been formed, it ought not to be done, as the dangers which may arise from opening the peritoneal cavity are thus avoided. But if the hernia has been strangulated for some days, and structural changes have occurred, it is better always to open the sac, and examine the protruded viscera.

When the omental protrusion is of old standing, thickened by deposit, or condensed by pressure, it should be left in the sac, in the hope that it may be agglutinated to the neck of the sac, and thus form a barrier against the re-lescent of the hernia. Lawrence thinks there is no advantage in this, but experience proves that it either gradually recedes or becomes atrophied. If the omentum be in a state of gangrene, the devitalized part must be entirely removed by a clean incision, and every bleeding vessel separately tied; it may then be returned, one end of each ligature being brought through the wound.

In all cases nothing is more important than the necessity of operating early. In femoral hernia the danger of delay is of peculiar importance, for three-fourths of the cases which refuse to rally after operation are of this kind. Femoral hernia is much less frequent than inguinal, but much more frequently requires operation. With regard to the question of opening or not opening the sac, experience decidedly tends towards the latter operation, although more by negative than positive evidence.

It may be asked, what are the conditions of intestine when its return would not be advantageous? There is only one condition when such practice can be deemed advisable, and that is where the bowel is decidedly ruptured. When gangrenous only, the neck of the sac has been shown to be its right position; but when ruptured, leave it in its place, return any unaffected bowel, if present, but leave the ruptured portion. (Mr. T. Bryant.)

III. DR. S. NICOLLS. If you do not succeed with the taxis, give a full opiate and try again in four or six hours; you will often find it will then be easily returned.

IV. DR. A. BUCHANAN. *Expiratory Method of Reduction.* The peculiarity of this plan is, that just before the taxis is applied the patient is directed to make a very full expiration, and to refrain as long as possible from making a fresh inspiration. While this is going on, the practitioner attempts to return the hernia, continuing his efforts gently but steadily, during the whole period of suspended respiration; when the patient is compelled to draw a fresh breath, the pressure should be somewhat relaxed, and the expiration again repeated and continued as long as may be required. It acts by dissociating the diaphragm from the abdominal muscles; and, by preventing them acting in concert, it prevents the patient from pressing down and resisting the efforts made to reduce the hernia.

V. BARON SEUTIN. *New Mode of Reducing.* The patient must be laid upon the back, with the pelvis much higher than the shoulders. The extremity of the index finger must then be passed through the ring between the viscera and the hernial orifice, (this procedure will demand great perseverance,) the finger must then be hooked, and sufficient traction exerted on the ring to rupture some of the fibres, giving rise to a crackling sensation. If this does not take place, the fibres must be submitted to a continuous forced extension, which, by distending them beyond their natural elasticity, generally terminates the strangulation. Considerable strength and exertion will sometimes be required, but the ring is enlarged just as if it had been divided by a cutting instrument, or it will be largely dilated, and reduction easily take place by performing the taxis.—*Braithwaite's Retrospect.*

ART. XI.—1. *Stricture of the Pylorus.* 2 and 3. *Constitutional Vomiting.*

[At a meeting of the Pathological Society of Dublin, December 13, 1856, Dr. Barton reported a case and presented a specimen of what he terms *simple stricture of the Pylorus*:]

1. Dr. Barton presented a specimen of *Simple Organic Stricture of the Pylorus*. The case was that of a man, aged 40, who was admitted into the Hospital of the North Union Workhouse in June last, complaining of daily sickness of stomach and vomiting after his meals. His countenance, naturally florid, was greatly wasted, and his whole body



emaciated. The lower part of the abdomen was shrunken and retracted, while the left hypochondriac and epigastric regions were prominent and very tympanitic upon percussion. No tumor could at first be discovered. He vomited regularly every day about two hours after breakfast, the ejected matter consisted of the meal last taken, and other partially digested matter. The bowels were costive, the action of the heart was very feeble, the skin dry and rough. He could give no account of his illness; he had been a healthy laboring man, until about six months before his admission, when he began to suffer from sickness of stomach, since which time he had been rapidly getting weaker. The bowels were freed by enemata, and the system supported by a liberal allowance of nourishment and stimulants; besides which a great variety of treatment was put in requisition to check the vomiting, without, however, any permanent good effect. He got weaker daily, plainly from want of nourishment, as almost everything taken into the stomach was vomited. Towards the end of July, a tumor was for the first time discovered in the right hypochondrium, about the size of the shut fist.—Next day the whole of the anterior part of the abdomen and thorax was covered with petechial spots, such as appear in a bad form of typhus fever; his pulse was scarcely to be felt; he died next day.

The body was emaciated to a great degree; the lungs were healthy, but pale and exsanguineous, like those of an animal bled to death; the heart was small, and in the cavity of the pericardium there was about three ounces of a deep red serum; upon laying open the abdomen, the stomach was found to occupy the right and left hypochondriac and epigastric regions, as far down as the umbilicus. Just at the commencement of the first portion of the duodenum, a hard tumor existed about the size of a walnut, about half an inch in length, quite smooth externally. The rest of the intestinal tract was healthy and quite empty.—Upon laying open the enormously distended stomach, about two quarts of a dark fluid, the color of coffee grounds, was poured out; the mucous membrane of the stomach was very pale and soft; no rugæ existed.—Close to the pyloric extremity, upon the anterior wall, was the oval cicatrix of an ulcer; the finger passed into the pylorus met with an obstruction close to the orifice; the tip of the little finger could, with some force, be thrust through this ring-like stricture, by which it was firmly grasped. The liver was small, blue and shrivelled. Dr. Barton called the attention of the Society to the circumscribed local nature of the disease, as it did not occupy more than about a third of the first portion of the duodenum; the presence of the cicatrix of an ulcer close to the stricture was interesting, as suggesting that the origin of the latter was coincident with cicatrization of the ulcer, lymph being effused into the submucous tissue around the pylorus, became organized and finally contracted. With regard to the diagnosis of the simple organic stricture of the pylorus, Dr. O'Ferrall had, several years ago, brought under the notice of the Society a case very similar to this, in which he pointed out the difference in the symptoms produced by simple organic stricture and cancerous disease of the pylorus, as follows:—in the cancerous disease the countenance is bloated and pasty, the food passes rapidly through the intestines, diarrhoea is present, and death takes place from the extension of malignant disease to other organs. While in the sim-

ple organic disease, the countenance has a remarkably wasted, starved look; the bowels are constipated, and death takes place from inanition. These observations of Dr. O'Ferrall were well borne out by the case before the Society.

Since the specimen was laid before the Society, a thin section of the indurated tissue forming the stricture was examined under the microscope, and found to consist almost entirely of dense fibrous tissue.\*—*Dublin Hospital Gazette*, Jan. 1, 1857.

2. *Case of Vomiting of forty years' Duration*: by JACOB BIGELOW, M. D.—A lady, now 79 years of age, has been at times under my care for the last twenty years. She reports that at the age of 39 or 40, she had a severe fever, on recovering from which she found herself unable to retain either food or liquid upon the stomach in any considerable quantity. She is confident that during the whole period of forty years, she has never retained a meal, but has vomited regularly at least three times a day. If she eats or drinks in irregular or intermediate hours, the material received is always thrown off, even if it be only a cup of tea or of water. The vomiting is easy, and without pain or great effort. The matter thrown up consists of the ingesta, having usually an acid taste. There is no bile, except during the presence of some temporary indisposition. She takes her food with relish, and in most instances throws it off quickly, being often obliged to leave the table abruptly for that purpose. If the vomiting is not complete, she occasionally drinks warm water to promote the evacuation and relieve uneasiness, especially at going to bed. She is confident that she ejects as much as she receives, but her daughter, who resides with her, thinks it may be three-quarters as much. This last supposition is undoubtedly nearest the truth, and would leave for her support one-quarter of each meal taken.

She is now in her eightieth year, having led an active life, in the enjoyment of a competent degree of health, except an occasional attack of acute disease. She has four times had severe erysipelas, attended in two instances with considerable sloughing. She has had dysentery more than once. Last spring she broke the os humeri and had an abscess in the shoulder. She is now in the enjoyment of fair health, the functions duly performed, and has made a journey of a hundred miles within a few months. She is confident that, for the period which has been stated, including one half of her life, she has never retained a single meal.

I have never found any tumor, effusion or tenderness, on pressure in or about the epigastric region, except the occasional effects of acute disease, as above mentioned. Her habit has been generally spare, but otherwise her appearance, spirits and bearing, are those of a person who has been benefited rather than injured by the smallness of the nutriment left for her support.—*Boston Medical and Surgical Journal*, October, 1856.

3. *Constitutional Vomiting*. (Note, April 3, 1849.) Mr. C., born in England, aged 55, resident in New Orleans for twenty years, in easy

\* Is not this simply a case of fibrous scirrhus, with or without cancer-cells?—ED. N. O. MED. & SURG. JOUR.

circumstances, yet leading an active life as a carpenter, has been all his life subject to a daily vomiting after meals, throwing up a considerable part of his food, together with wind. These vomitings rarely are attended with any unpleasant symptoms or nausea. He is generally healthy, being ruddy and active.

Although I had been for<sup>†</sup> some years Mr. C.'s family physician, the above meagre account is all the record I find in relation to his constitutional vomiting, excepting a note made upon his attack of cholera, namely, that the irritability of his stomach was less than is usual, his case having been one of the most severe in other respects, among such as did not prove fatal.

About three or four years ago, as I learn, this gentleman had a tumor on his back, and having applied to a pretended cancer-doctor, then resident in this city, died soon after, the cancer curer having charged six hundred dollars for his services.—ED. N. O. MED. & SURG. JOUR.

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ART. XII.—*Double Stricture formed by swallowing Strong Lye.* By  
ISHAM G. HEARN, Waynesboro, Wayne County, Tennessee.

DR. BOWLING:—Mr. Charles C. Parker, aged about sixty years, a resident of Wayne county, Tennessee, of very intemperate habits, on the 26th of May last swallowed a portion of very strong boiled lye, mistaking it for whisky. As soon as he tasted it, he spit out as much as he could, but a small quantity was swallowed; rinsed his mouth with water, and drank some sweet oil in order to neutralize the effect of the caustic, but in a few hours was convinced that he had swallowed enough of the alkali to hurt him very seriously, for he found it impossible at times to swallow anything. This was his miserable condition for a considerable length of time. I will have to write the history of the case from memory, as I neglected to take any notes. He was put on the use of mucilaginous drinks during his entire illness. About the middle part of his illness, he presented well marked symptoms of a bilious nature, and some hyd. sub. mur. was given him by his attending physician, Dr. Morris, which passed through the strictures, had its effect on the system, and improved the general health. He suffered all the time with a burning sensation along the track of the œsophagus, but more especially at two separate points. He had all the time a craving appetite, and has been known to cry like a child for food, but was unable to take enough to satisfy the demands of the system. He was finally put upon the use of arg. nitras, which soon healed the sore surface about the strictures, enabling him, as he imagined, to swallow much better. I went to see him, on one occasion, with Dr. Morris, in order to introduce a bougie, but he thought he was improving so fast, he dissuaded us from it, and it was never done. About ten days before



his death he complained of a deep-seated burning sensation just in the region of the right scapula, which continued three or four days before any sign could be discovered externally. Finally a large rising made its appearance, immediately over the place complained of on the back. This was opened, giving vent to a good deal of gas and a large amount of matter. A few days afterward he died. Before his death, however, it is said by his nurses that whenever he coughed or exerted himself there would be an escape of very offensive gas from the abscess.

Drs. B. F. Dawson, Nixon and myself, made a post-mortem examination. We found two strictures in the œsophagus; one about equidistant from the mouth to the stomach, and the other about an inch from the cardiac orifice of the stomach. The lower one was the one of which he complained the most, and we found it to be a good deal smaller than the other. You could probably have passed a small crow-quill through the aperture. I cut out the œsophagus and brought it home with me to preserve in alcohol. The posterior superior part of the right lung we found in a state of gangrene, and as soon as the periphery was cut, the part shrunk down, a cavity being formed by a dark matter, resembling pea-soup, escaping into the chest. There was no adhesion of the lung to the wall of the chest, nor was there any perceptible opening through the wall, so as to connect the two, the lung and the external abscess. The strictures were found sound and well, but permanent. Is it possible there could have been any connection between the old strictures and the abscess? Would the caustic produce the abscess in the lung, and that produce the effect externally? I hope, Messrs. Editors, you will give us some remarks in reference to this singular subject. I have put it down in a bungling way, but trust you will understand it, and publish it in your Journal, if you wish.—*Nashville Jour. of Med. & Surg.*

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#### ART. XIII.—*Retention of Urine from Stricture—Syme's Operation.*

[In a case lately operated on by Mr. Lane, at St. Mary's Hospital, the patient had received an injury to the urethra in the perineum some years ago, which was followed by stricture and fits of retention of urine. In one of these attacks, on examination by Mr. Lane,]

The constricted or nearly obliterated portion of the urethra extended for two inches in length; so that, in order to relieve the man of the agony of retention of long standing, it was found necessary to open the membranous portion of the urethra behind the stricture, as recommended by Guthrie and Liston, when a large quantity of urine was drawn off, to his inexpressible relief. It was next found—whether from the rest in hospital, the warmth and relaxing effects of confinement to bed, the subsidence of congestion and spasm, so often observed, or the strain taken off the bladder, or the irritation of the instruments lessened, which were withheld for some days, or perhaps from all these causes taken together—after he had been a week or ten days in hospital, that

Mr. Gascoyne, the house-surgeon, was able to pass an instrument through the strictured part and through the old wound in the perineum into the bladder. Indeed, Mr. H. Thompson finds this is almost always possible under such circumstances.

August 1st. Mr. Lane, to-day, as the wound of the operation was still open, proposed to lay the two parts of the urethra into one. With that object in view, after chloroform was administered, he passed a grooved staff, then cutting very carefully in the median line, cut upwards towards the contracted or strictured portion of the urethra, and then subsequently passed a large instrument on into the bladder, to be left there permanently for some days, secured in the usual manner by plug and pieces of tape.

This case is instructive, as puncture of the urethra at its membranous portion, which is not often seen in the east end hospitals, was preferred to puncture through the rectum—apparently not so good an operation, as the instrument slips out again and again, and new punctures have to be made in the rectum; whereas puncture anterior to the verumontanum—the latter acting the part of a valve—is followed by more favorable results. This portion of the urethra, also, is easily reached by the surgeon, being covered merely by a sheath from the deep perineal fascia; the line of incision, if carefully made in the middle line, separating some fan like expansions of the compressor urethrae (Guthrie and Wilson's) muscles, which meet at the *raphé*. It is necessary to hit off with microscopic accuracy the delicate line of the *raphé*; no simple dashing cut in the perineum will do; for if we cut sideways through the muscles the wound will be found to gape open, and there will be hæmorrhages, and, possibly, extravasations of urine between the two layers of the deep perineal fascia, extending upwards as far as the pelvic fascia, and downwards to the side of the rectum, with those troublesome if not fatal results of infiltration of urine, so often seen in hospital practice. An additional point in favor of this operation of Mr. Lane, according to the experience of the west end hospitals more particularly, is that about the fourth or fifth day of bad retention of urine, the membranous portion of the urethra, becomes dilated, and is easily reached; whereas in the operation by puncture above the pubes, we may not reach the bladder at all. In that of puncture of the rectum between the vesiculæ seminales, and so near the peritoneum, we may cause abscesses or disease of the rectum itself, and the instrument has a tendency to slip out, while in both these temporary expedients the original stricture remains uncured, or nearly so. Another point of no little importance, Mr. Lane conceives, is that the membranous is perhaps the most fixed portion of the canal.—*Assoc. Med. Jour.*—*Braithwaite's Retrospect*, 1857.

#### ART. XIV.—*The Reduction and Diagnosis of Dislocation of the Femur.*

1. *Reduction of a Dislocated Femur, by Manipulation only, three weeks after the accident.* By THOMAS WORMALD, Esq., St. Bartholomew's Hospital. [This case is a good illustration of the efficiency of the manipu-

lar method in reducing dislocations of the femur. A strong, tall, muscular man, aged 44, walked from his own home, a distance of a mile, to see Mr. Wormald. He states that three weeks before, he fell about fifteen feet, and had been lame in his hip ever since. He laid in bed ten or eleven days after the accident, and since then had been going about. Mr. Wormald immediately detected dislocation into the thyroid foramen.]

On the following day, (the twenty-fifth after the accident,) reduction was effected in the following manner. The patient, under the influence of chloroform, was laid on his back on a table, a towel for counter-extension being passed round the inside of the hip. The operator then standing in front of the patient, placed the front of the knee of the affected limb in his own axilla, passing his right arm under the thigh from within outwards. With the left hand he then grasped firmly the upper part of the displaced bone, at the same time taking his left wrist in his right hand. In this manner the thigh was firmly held, easily managed, and great force in rotating it and directing its movements, could be applied. Mr. Wormald, now bending the thigh on the pelvis, accomplished a rotatory movement outwards. The first few attempts had the effect only of breaking down adhesions, and loosening the bone. Complete reduction was, however, after a short time, (about ten minutes,) effected, the slipping of the head of bone into its socket being attended by a snap distinctly felt by the operator. The symmetry of the two sides was perfectly restored.

In commenting on this case, Mr. Wormald mentioned one treated by himself some years ago, in which, after a failure in the attempt to reduce by pulleys, he succeeded by the plan just described. The patient was a very muscular man, aged 22, and the bone had been out of place six weeks. The dislocation had originally been on to the ilium, but in the attempt with pulleys the head of the bone had been thrown into the ischiatic notch, from which all the force that could be applied by them had failed to remove it.

2. *Diagnosis of Dislocations of the Femur.* In the case above given, Mr. Wormald pointed out to the students present a sign of dislocation of which no mention is, we believe, made in books. On looking at the limb from the side, the front outline of the thigh (the belly of the rectus) was seen to present a concavity instead of the curved prominence natural to it. The explanation was of course easy, in the circumstance that the bone was thrown backwards, carrying with it the muscles of the thigh.

In a case which occurred some few months ago under his care in Guy's, Mr. Hilton drew attention to a condition which was extremely well marked, respecting which he observed that, although rarely attended to, he believed it to be one of the most useful diagnostic signs in difficult cases. It consisted in the loss of support from behind to the vessels. On pressing the finger on the latter, the existence of a hollow behind them, and the deficiency of that firm support which they naturally possess, was most readily appreciated. This sign would be of great value in those cases in which the difficulty in diagnosis lay between dislocation of the bone and fracture of its neck or shaft high up.



We are anxious to draw attention to the above observations, because everything is of importance which tends to render more certain the diagnosis of these dislocations. Few things are more damaging to a surgeon's reputation than to have made a mistake in the opinion he has given as to the nature of a case of this kind. Yet although, under certain rare combinations of circumstances, the detection of a dislocation of the hip must be admitted to be a matter of great difficulty, we cannot but think that in the majority of the cases in which mistakes occur, the fault is rather in a careless examination than either in absolute want of knowledge on the part of the surgeon, or real obscurity of the symptoms. To strip the patient, to expose both the sound and the injured side, to try the motions of the joint in different positions, standing as well as lying, these are precautions which, if observed with care, we can scarcely think would allow of the committal of error. It may be, from swelling having already occurred, that the prominences of the part have been concealed, and so much tension and tenderness produced, that the patient will not permit the necessary manipulation. Under these circumstances we cannot but think that it would be much better at once to put the patient under chloroform, and make a satisfactory examination, than to wait in uncertainty till the swelling has subsided. Not only would the use of anæsthetics, under such circumstances, facilitate diagnosis, it would greatly aid treatment. The reduction of either a dislocation or a fracture would be much more easy during the relaxed state of the muscles thus produced than while the patient was conscious.

—*Med. Times and Gaz. Braithwaite's Retrospect*, 1857.

#### ART. XV.—EXTRA-UTERINE PREGNANCY—CESARIAN SECTIONS.

1. *Extra-Uterine Pregnancy*: By J. W. WILSON, Professor of Midwifery, Calcutta. (*Indian Annals Med. Sci.—B. & F. Med. Chir. Rev.*)

Case I.—Loocharee, aged twenty-three, admitted September 12th, 1855, had always menstruated regularly till about five or six months before admission. When, as she supposed, about four and a half months gone, she suffered an attack of fever, with pain in the iliac regions. She stated she had partially miscarried. The uterine tumor was felt two fingers breadth above the navel; a great deal of abdominal tenderness; much pain, but unlike labor. Sanguineous discharge from vagina; os soft, open; diarrhœa. Attempt made to induce premature labor.—Uterine sound was passed nearly as high as the navel. Increasing tympanitis; as attempts to relieve tension by drawing off the air and liquid by metal and flexible catheters, introduced their entire length through the os, failed, a trocar was pushed into the left iliac region, where the tympanitis was most marked. A considerable quantity of stinking gas issued, and some ounces of an exceedingly fetid liquid, but the tumor could not be emptied of liquid or air. A second puncture was made below the umbilicus, where the tumor felt soft and fluctuating; arterial blood, evidently placental, welled up through the canula; slight pres-

sure restrained this. The woman's health was now rapidly declining ; a director was introduced through the open puncture, with the view of enlarging the opening to extract the fetus and wash out the cyst ; but the introduction of the director was followed by a free discharge of arterial blood, readily checked by pressure. As appeared afterwards on dissection, had the incision been carried in the direction intended, the mass of the placenta would have been divided. With the view of introducing the finger to ascertain the position of this, I directed the skin-wound to be enlarged. Death on the 2d of October. *Autopsy* : The parietal layer of peritoneum was of a dark color, and thickened. From below the navel it was adherent for about two inches, but a free shut sac was formed over the pubes, where adhesion had not taken place. The true cyst was beneath this, and in it a five and a half or six and a half months' fetus, in an advanced stage of decomposition, lying in a dirty offensive fluid. The placenta was large, situated anteriorly, and to the left. There were no distinctive membranes. The uterus, of normal size, lay behind, and a little to the right ; there was a small opening on the left side, communicating with the sac. The intestines and parts contiguous to the sac were so adherent and matted together, that the ovarian tubes and ovaria could not be traced.

Case II.—Dwyra, aged twenty-one, admitted 26th April, 1855. Says she menstruated first at twelve years old, and became pregnant immediately after this first menstruation, and at her full time had an easy labor. Subsequently, for eight years, no return of menstruation. She supposes she is now in her eighth month (natives of Bengal reckon pregnancy by lunar periods.) Six weeks before admission, she was much reduced by an attack of cholera (every evidence of sjanemia.) No indication of kidney disease. Sounds of fetal heart, 140 ; mother's pulse, 120. Child last ascertained alive on 16th of May. On the 18th, she said, "My child is dead ; it has not moved for some days." From this time she lost ground. Unnatural gestation not being suspected, attempt to produce premature labor was made ineffectually. The uterine sound being passed up to rupture the membranes, passed to the usual depth of the unimpregnated uterus, where its progress was arrested. At this time the child could not be felt through the abdominal parietes, and there was a hard, lumpy substance felt above the pubis. Extra uterine pregnancy now diagnosed. Her full time was complete in the first week of July. The solid tumor became less distinct. On the morning of the 3d, the abdomen seemed swollen and more tense ; and on percussing it, the usual completely dull sound was not returned ; the tumor over the pubis was no longer perceptible. She had suffered during the night a paroxysm of shivering, followed by febrile symptoms. An enema given returned with some faeces ; and shortly afterwards there was observed a continued dribbling of a turbid-looking fluid from the rectum, similar to what was afterwards found to exist in the sac containing the child. She gradually sank, and died on the 6th. An attempt to relieve the tympanitis and explore the case, made by puncturing the fundus of the uterus, failed of success ; as was afterwards ascertained from the circumstance of a thick placenta adhering to the outer part of the fundus of the uterus, and preventing the instrument reaching the interior of the sac containing the child. *Autopsy* :—Peritone-

um, abdominal viscera, and sac, firmly matted together. The sac occupied the fore part of the abdominal walls to the ensiform cartilage. Uterus of natural size. Surmounting the fundus was the sac, of a dark-grey color, without any distinctive membranes, its walls adherent on all sides to the contiguous parts before and behind, out of which it seemed formed. It contained a child of apparently eight months' development, and a placenta attached to the exterior of the fundus uteri. Where the ovum was originally detained and developed was not ascertained; but the parts, as they were displayed, had an appearance as if it had lodged somewhere near the fundus, either in the Fallopian tube where it joins the substance of the uterus, or near to this extremity; and that it had in its growth lifted the peritoneal covering from the fundus, the peritoneum being carried out as an investment of the sac. The communication with the rectum was not found.

2.—*Cæsarian Sections*: By J. FRAYZER, M. D. (*Ibid.*)

CASE I.—A Mussulmanee, aged thirty-five, admitted into the King of Oude's Hospital, Lucknow. Labor arrested. Obstruction was caused by general distortion of pelvis; the tubera ischii closely approximated; the rami of pubes are almost in apposition. The outlet is reduced to a passage so small that one finger can with difficulty be introduced. The woman was much deformed in body from rickets during infancy. Spine curved laterally and posteriorly. Extraction of child, even piece-meal, by natural outlet, would have been impossible. The Cæsarian section was performed under chloroform. Hæmorrhage not very great. Opium, calomel, and salines constituted after-treatment. Death on third day.

*Autopsy.*—Wound partially united; intestines adherent to each other, to the abdominal parietes, the uterus, and the bladder, by coagulable lymph. The cavity of the abdomen contained a quantity of bloody fluid, with shreds of lymph; and the surface of the peritoneum was also covered with it. The uterus had contracted, but the wound was not completely closed; hence the hæmorrhage into the cavity of the abdomen. The child presented some singular abnormalities. The body was in size fully natural; weight, eight pounds; length, twenty inches and a half. The right foot was absent. On the left hand, the index, middle, and ring finger were wanting. The fingers of the right hand present, but malformed; some of them consisting of only two phalanges. The frontal bone was all or nearly absent; upper lip cleft. A tumor, about three inches above the left eye, appears to be a portion of the brain. The child lived for about twelve hours, sucked some milk, and passed meconium.

CASE II.—A Mussulmanee slave, aged thirty, admitted at same Hospital, 15th April, 1854. Says she has been in labor eight days. First, conception; says she is considerably over nine months. Irritative fever. The outlet of the pelvis is so contracted that the finger can with difficulty reach the os uteri. The rami of the pubes approximated; the sacrum bulges forward, reducing the passage so much, that delivery by natural passage seems impossible. Cæsarian section under chloroform. On making incision through the uterus, the placenta was exposed, being attached to the anterior surface of the womb; profuse hæmorrhage instantly took place. Without loss of time, two dead female children



were removed, attached to a single placenta. The hæmorrhage for a moment was frightful, filling the cavity of the abdomen ; it was sponged out as quickly as possible, and the uterus stimulated to contract by pressure. She remained under the influence of chloroform for about two hours. Calomel and opium were ordered at once, and ice kept to the abdomen until it produced shivering ; the bleeding then ceased.—Next day, vomiting. Third day, death.

*Autopsy.*—No attempt at union of wound in abdomen. Commencing inflammation of intestines ; some watery fluid effused into abdominal cavity ; the peritoneum in an incipient state of inflammation ; the wound of uterus closed by coagulated blood and lymph ; and some coagulated blood in cavity. The uterus had contracted so as almost to close the wound. The inlet of the pelvis was contracted to a diameter of less than three inches each way ; the outlet was so narrow that the finger could but just pass through, the sacrum bulging forward, and the tubera ischii and rami of the pubes being in close approximation. The body, with this exception, not much deformed.

#### ART. XVI.—*Pharmacy as a Business*: By EDWARD PARRISH.

MUCH is said and written about the *science* and the *art* of Pharmacy, but in the present essay I propose to treat it as a *business*, and to hint at some causes tending to its depreciation, and some of the means within our reach by which to increase its importance and respectability in a pecuniary point of view.

If we apply to the pharmaceutical profession the question by which any pursuit is apt to be judged in this practical age and among business men, *how does it pay?* we shall have to admit that it compares unfavorably either with most kinds of mercantile business, or with the so-called learned professions.

It resembles a trade in some respects and a profession in others.—Considered as a trade, it is limited in the nature and extent of its wares, which being mostly required only in small quantities and in times of sickness, fail of that unsolicited, universal and constantly increasing demand, which, in the case of articles of necessity and even of constant utility, gives an unlimited scope to the operations of the dealer. It is thus almost of necessity a comparatively small business.

As allied to the professions, Pharmacy is considered as occupying a subordinate position. The apothecary, although equal to the physician in the responsibility incurred, is inferior in the range of knowledge required and in the compensation awarded. His knowledge, skill and integrity, however, constitute the larger part of his capital, and these can only be exercised in a restricted sphere, neither can they be exhibited on his sign, nor in his windows, nor on his shelves, and, unfortunately, they are too much overlooked by his customers.

The small capital and limited scientific education required, makes ours a very easy business for persons of limited means to enter, and hence its gains are greatly divided ; there are many proprietors of shops

in our large cities, who scarcely make the wages of a journeyman mechanic, though constant and zealous in their devotion to business. In Philadelphia, which would fitly support one hundred pharmacutists, five times that number may be counted.

Although the influence of monied capital is less marked in this than in many more strictly mercantile pursuits, it is certainly an important element of success, a costly establishment will insure a higher grade of custom and larger gains than a plain and economical one, due care being taken as to location. A large and complete assortment is, indeed, generally quite essential to the prosecution of the business with profit, and although a growing disposition has shown itself, of late, to branch out into articles of trade scarcely compatible with the objects and aims of our profession, yet, on the other hand, some have suffered from too exclusive ideas of its true scope and limits. Within the *materia medica* which it is the duty of the druggist and apothecary to supply, are natural and artificial productions, in great variety, drawn from all quarters of the globe, and many of them used equally in general domestic economy and in the cure of disease. The farinaceous products, gelatine in its various forms, the nutritious mosses, the West India fruits, mustard and the spices, are appropriately included in the stock of the druggist, though almost taken out of his hands by dealers who are less educated in the knowledge of their origin, properties and uses, and less qualified to detect the important adulterations and sophistications to which they are liable.

As dealers in aromatics and essential oils, and as manufacturers of some medicinal essences, spirits and soaps, pharmacutists are closely connected with perfumery, with articles of use in the toilet and in promoting cleanliness and otherwise preserving health; and, indeed, the obvious relation of the art of the perfumer to that of the apothecary have, from time immemorial, thrown them into the same hands.

Confectionery, though it may be questioned whether it has not quite as much agency in creating as in curing disease, is still necessarily connected with pharmacy, and, among the class of expectorants particularly, numerous saccharine preparations belonging equally to the confectioner, are found on the shelves of the apothecary.

As chemists, we are looked to for numerous organic and inorganic products, which, though not strictly medicines, have their uses in the arts and in domestic economy; these, whether we manufacture or simply deal in them, are among the legitimate objects of profitable commerce to the druggist and apothecary. Carbonic acid water is an official article necessarily kept on hand, and by extending its use as a beverage, it may be made a source of profit.

Spirituos liquors for their proper and judicious use as tonics in conditions of debility and relaxation are much prescribed by physicians, and may be included in this enumeration of articles of trade appropriate to the apothecary.

Surgical and obstetric instruments, lint, bandages, the various forms of apparatus for injection, inhalation, and the nursing of infants, should be kept on hand as far as circumstances render it expedient.

It will be obvious, at a glance, that the increase of articles of commerce so far as a market for them exists, is a certain means of increased

revenue, and the variety called for by the wants of the public, and sanctioned by custom as appropriate to the business of the apothecary, is sufficient to furnish considerable scope for the investment of capital and the judicious direction of energy and enterprise.

But the business of the apothecary has an important relation to manufacturing, and it is in this that its principal profit consists. Our largest profits are on articles of our own preparation, and these may be few in number or many, at our option.

By a careful record of sales in a retail store, with a good general run of business, I found that in a given time, of every one hundred sales, forty-eight were of articles manufactured or compounded in the store, and in which labor is an important item of cost.

In every establishment, it is necessary to keep a sufficient number of apprentices or employees to attend to the business of the counter at all times, and to relieve each other in cases of sickness, accident, &c.—With a view to profit, as well as for the instruction of these, they should be kept busy, except during hours allowed for study and recreation, and the manufacturing department offers a fine field for their employment. It may, indeed, be questioned how far we do justice to those placed under our care as candidates for the profession, without giving them thorough practical instruction in the manipulations of our art.

The manufacturing department of our business may be extended to very great profit. The apothecary, who is alive to his own interests, should not fail to prepare every kind of medicine for which there is a demand.

As far as the Pharmacopœia goes it will be his guide: beyond that, he must rely upon known or approved formulas, or publish his own as experience may justify their adoption. Let him issue his remedies, appropriately labelled with a plain statement of their composition, uses and adaptations, so that physicians may prescribe them by their names, and the public, becoming acquainted with their merits, may avail themselves of them without medical advice. Let me not here be understood as countenancing quackery; the course now recommended tends directly toward the most practicable method of ridding ourselves and the public of this terrible scourge.

There can be no quackery where there is honesty, candor, publicity as regards formulas, and an enlightened and dignified policy toward the public. I would aim to establish such a policy as would be inimical to the *professional* empiric, as well as to the outside, undisguised quack, who makes and sells secret nostrums; for both classes beset the apothecary, and the former is yet more dangerous to his integrity than the latter. The apothecary should never, on his labels or in his advertisements, stoop to evasions and subterfuges. Let him address candid and reasonable words to intelligent people. Nothing so establishes a man in the favor of the community as inflexible honesty, that kind of honesty which extends to words, to manners, and even to the bottling and labelling of a medicine. The reputation of an honest man is a standing rebuke to the whole host of deceivers, who strive rather *to seem* than *to be*, and who, whatever wealth they may gain, can never be really respected by themselves, much less by those around them.



It is a relic of the days of superstition, too prevalent among physicians and pharmacutists, to rely upon secrecy as an element of power. The *secret* is the shield of the quack, but never can aid the true servant of the healing art. The intelligence of the age is not satisfied with pretences ; it asks for light, it demands outspoken truth ; and the true exponent of the science of the nineteenth century, wherever he goes, diffuses knowledge and intelligence ; what he knows, he is ready to communicate for the good of humanity, and what is more to the purpose of this essay, it comes back to him a hundred fold, in the confidence and the support of the community.\*

Intelligent people always appreciate knowledge and skill ; they would rather trust a man they know, whose claims are not beyond his well-tried merits, who stands well with his fellows, and in the estimate of those qualified to judge him, than a quack they never saw, whose name is "tabooed" among the educated and scientific, and whose chief claim is the possession of a secret. To suppose otherwise, is to deny to our people the attribute of common sense, and to ignore the experience of every one who has fairly tested the public feeling on the subject.

I have, elsewhere, pointed out the natural antagonism between the legitimate drug and apothecary business and that of the quack, and, it is, perhaps, more apparent in this connection than in any other. In vain do we acquire knowledge of the science and art of pharmacy, and seek to exercise it as a profession, if we are to yield to the quack the most important and the most profitable department of it, that of catering to the popular want for eligible medicinal combinations.

It is a poor restitution to the pharmacist that the *nostrum vender* would bribe him into his favor, by offering him a share in the profits of the disreputable traffic. We should remember that it is our right, founded upon our education and devotion to the public service, to supply all within our respective neighborhoods with medicines, for the most part of our own manufacture. Let us not, then, underrate our influence in the community, but with a just estimate of our honorable calling, and of the responsibilities it involves, aim to supply the well ascertained demand for popular medicines, seeking the favor alike of the physician and the public, and realizing that our interest is here in accordance with high principle, with humanity and with duty.

There are many physicians who decry the demand for popular medicines, and place in the same category with the quack every druggist who ventures to put up medicines for sale with the necessary directions to adapt them to popular use ; the great majority of medical men, however, freely admit the necessity for popular medicines, and themselves prescribe them ; some, unhappily, patronize the quack, from the very absence of standard preparations emanating from regular pharmacutists.

The high-toned physician does not covet continual applications from his patients upon every trivial occasion, preferring to hold his services in reserve for cases where the true dignity of his calling can be shown by the exercise of skill in diagnosis and treatment ; these well know that it is vain to expect that people will send for the doctor for every ache and pain, which their experience has shown them will be cured by a well-known plaster or ointment, or that they will incur the expence

of a physicians' fee, every time they would be relieved of a catarrh or a diarrhoea. The great body of our population are influenced by practical and economical views, which many of them have learned in the school of hard necessity.

If the question were raised as to whether the use of medicines ought to be restricted to cases under care of physicians, it might admit of discussion, but all experience goes to prove that the amount actually dispensed without prescription, far exceeds that prescribed by physicians; and the question is not, shall the use of popular medicines be suppressed, but shall the pharmaceutical profession supply the demand, by the manufacture of reliable medicines of known composition and prepared according to established scientific formulas, or shall they leave the whole field to the quack, and themselves become the agents for disseminating his falsehoods and adding to his gains.

If the medical and pharmaceutical professions could thus unite in an effort to *supercede*, rather than to *oppose* the use and sale of secret nostrums, they would be mutually strengthened thereby, and a great public good would be accomplished.

We have every motive to sustain the legitimate profession of medicine. Upon us, as an independent and conservative branch of the medical profession, devolves a great share of the responsibility of educating the public mind to a due appreciation of scientific medicine, against the pretensions of the charlatan and the empiric. This we should take all occasions to do by precept and example; we should never fail to expose false pretence, and to commend knowledge, skill and professional probity, not as though interest or some concealed motive of self aggrandizement made us sustain the physician, but because we prefer education to ignorant pretence, because we would protect the public from imposture, and guide, under the wing of a liberal and beneficent profession, those who might otherwise be the victims of the cupidity and ignorance of the charlatan.

Returning from a digression, which the nature of the subject seemed to demand, I may advert to other profitable openings in the line of pharmaceutical manufacture, namely, the improvement of the quality of pharmaceutical preparations, and the multiplication of new remedies.—A pharmacist can hardly fail to improve his business by fostering, among physicians who resort to his shop, a taste for the finer products of the pharmaceutical art; these command a higher price than the old and more familiar remedies, and whether really better for the purposes designed or not, they gratify a taste for novelty and for elegance which we can ill afford to disregard.

To this improvement and modernizing of the art, we may confidently look as an important agency in counteracting the causes tending to depreciate our profits, and render our profession less desirable to persons of enterprise and business capacity.

Of these deteriorating causes, excessive competition is the most important. "Competition is the life of business" as long as it quickens the perceptions and heightens the zeal of competitors, to improve the quality and increase the assortment of their goods, and to attract public attention to them; but as soon as the supply exceeds the demand, and the maximum of business it attained, then it becomes a serious evil

to sellers and buyers. In the struggle for business, prices fall, then quality is sacrificed, then the business ceases to be remunerative, and, finally, the evil cures itself, though not without a sacrifice of the interests of one or more of the competitors.

The nature of the apothecary business, especially as conducted in large cities, renders it peculiarly susceptible to the evils of competition. As has been already said, the requisite capital is very small, and many enter it with expectations which are extremely limited and without the ambition to make it profitable beyond a bare support.

The profit upon the cost of articles sold is large chiefly from the smallness of the quantity required by the purchaser. The cost of a dose of calomel, or of castor oil, or of salts is not the basis on which its price is determined in dispensing; this must be arbitrary, and is founded upon custom and upon the reasonable requirements of the case.

The ruinous policy has been adopted by some, of reducing the price of these little things; a policy uncalled for by the public, and indeed of very doubtful advantage even to the poor. The old limit of the sixpence, which used to be so well known out of doors that a fraction of that small coin was seldom offered us, has been too generally abandoned; so that we now have reduced prices for nearly all the little items so continually demanded, and which, indeed, constitute a very large share of the business of the retailer.

This cheapening of single doses of the common medicines is in keeping with a reduction on the prices of more costly articles and larger quantities, and it is now customary to sell these by retail at from 20 to 33 per cent less than they brought fifteen years ago.

In this connection it is proper to notice the effect produced upon the retail business in places where it exists independently of the wholesale, by the practice of wholesale dealers of supplying the public at wholesale prices with quantities falling within the range of the retail trade. This kind of competition is ruinous to the retailer, and constitutes a just cause of complaint if not of retaliation.

There are articles of common necessity sold generally in considerable quantities, which constitute exceptions to the usual rule of retail prices, and which are equally called for at wholesale and retail stores.

In these cases the prices should be maintained so as to allow a reasonable profit to the retailer, selling at the lowest price at which the public is supplied; happily the remedy for any violation of this obviously just rule is in the hands of the retailers themselves, who here have the whip handle if they have the spirit to wield it.

The practice of compounding prescriptions in wholesale stores is also one which seriously interferes with the legitimate province of the apothecary, and on all accounts calls for his firm and determined opposition.

There is no shadow of reason why charges for compounding prescriptions should share in the downward tendency I have spoken of. The public does not demand a reduction, and would not generally appreciate it, and yet, as if urged by a fatal infatuation, some pharmacists are cheapening even this special and most important part of their labor — In Philadelphia, (and doubtless it is so elsewhere,) the price for compounding the same prescription varies 25 or even 50 per cent., according to location, and the views of the apothecary of his interest or du-



ty. Such discrepancies ought not to be, except when the varying circumstances of purchasers seem to call for discrimination.

The duty of the apothecary to the poor is closely involved in the consideration of this subject. Frequently a considerable proportion of our customers are of the class to whom it is a hardship to pay the charges fixed by the physician and apothecary; sickness and poverty combined constitute a claim to sympathy which can seldom fail to receive the aid of those removed from the pressure of want, and it is but justice to say that no class in proportion to their means is more open to the calls of charity, whether in the field which their profession opens before them, or in the more general and enlarged spheres of benevolence open to all, than those who, in the capacity of conservators of the public health, come so closely in contact with the people. Yet while we are touched with the difficulties of the poor, and to the extent of our ability seek to lighten their burdens in sickness, let us not allow ourselves to fall thereby into habits which must interfere with our business interests and thereby restrict our means of good.

It is indeed doubtful whether the cheapening of medicines is of any advantage even to the poorer classes, who are perhaps too commonly inclined to their injudicious use. It has been truly said that "more injury is done by amateur dosing than by any epidemic." Economy would lead persons of restricted means to buy the best of medicines, but to buy them with judgment and under competent advice.

The great incentive to the deterioration in the quality of drugs which has brought the science of medicine into such disrepute, and given its enemies one of their strongest weapons against it, has been and is the cheapening of medicine. Against this let us bear a united testimony, and seek, by precept and in practice, to maintain a reasonable and remunerative tariff of charges.

If the times call for any change in our prices, they indicate an advance. Let any apothecary compare his invoice book of twelve or fifteen years ago with his recent ones, and he will find an advance in the cost of raw materials. In cinchona, rhubarb, jalap, and even our indigenous spigelia, serpentaria, etc., we have examples of frequent advances in cost which have recently subjected the retailer to considerable inconvenience. Alcohol, which is so very important a menstruum in pharmaceutical preparations, has undergone an advance, which, though accompanied by fluctuations, seems to be a permanent one.

On the whole, it is apparent that the profits of retailing medicines have diminished by the increased cost to the retailer of the raw materials and of the principal solvent he employs, while the tenacity under the spirit of competition, without the restraints of a just and wise conservatism, is to lower the prices charged, and to bring the business down to the level of a trade, and a poor one at the best. Meanwhile, the expenses of living are advancing, the increased abundance of coin has produced of recent time a proportional advance in the value of land, of commodities and of labor, and it becomes us to advance with them.

If we would see our profession rising in social standing and influence, we must cease to compete in prices, join in holding up the standard of remuneration to a just and reasonable point, and by a liberal and fraternal policy toward each other, and a dignified bearing toward the

public, show that our profession merits a higher consideration than pertains to the mere trader, and that the pharmaceutist deserves to be remunerated for his knowledge and skill as well as for the wares he offers for sale.—*Proceedings of the American Pharmaceutical Association*.—1856.

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ART. XVII.—*Is the Water of the Lower Mississippi Medicinal?*

M. Lozières, in his second voyage to Louisiana, (1794) attributes the great salubrity of New Orleans to the use of the water of the Mississippi, which he regards as excellent. (I. 355-6.) In a book of travels in Louisiana, at the same period, it is reported that the water of this river is not only pure and agreeable, but that it has the remarkable property of contributing to increase the human species. (17.) Boissu, more than a century ago, advanced the same opinion in regard to the female portion of the population.

The Medical Review for Sept. 1824, has the following statement :

*Medicinal properties of the waters of the Mississippi* —[Extract of a letter to the Editor.] My health being much enfeebled, necessity compelled me to take a trip to New Orleans for the sake of using the water of the Mississippi river. The effect was salutary and the voyage a pleasant one. The Mississippi water, when freely drunk, produces powerful effects—when filtrated it is very clear, and may be drunk in large quantities without burthening the stomach. It certainly possesses some properties not common to other waters, but its qualities I believe have never been examined by chemists.—*Silliman's Journal*.

The late Dr. Drake says " that the salubrity of the Mississippi water, or that of the Missouri which imparts the character of turbidness, is not an open question. From St. Louis to New Orleans, the testimony of the population on its banks, and of those who spend a part of their lives upon it as watermen, is unequivocally in its favor. Many persons drink it before its suspended materials have subsided, and seem to prefer it to that which has been rendered transparent by time or art ; that it produces some effects on the system, which transparent water from wells and springs and our other rivers does not, is an established popular opinion. It is even regarded by many persons as being to a certain extent medicinal and especially adapted to the cure of chronic functional disorders of the stomach, bowels, and liver—an opinion in which I am disposed to concur. That its daily use averts some forms of disease may be admitted as probable ; but precise observations on all of these points are wanting

The water of the Missouri and Lower Mississippi, again differs, as we have seen, from that of the Upper Mississippi, of the Ohio, and of their

tributaries, in the great amount of suspended materials. Notwithstanding, but rather in consequence, it is universally regarded as salubrious, and even, by many persons, alterative and medicinal, especially in chronic ailments of the abdominal viscera. To produce any effects of this kind it should, no doubt, be drunk immediately from the river, and before it has undergone clarification by deposition, or by any artificial process." (D. DRAKE, M. D. *Dis. Valley Miss.* I. 72. 662. Cincinnati, 1850.)

ART. XVIII. — *Topographical and Sanitary Observations on the Delta of the Mississippi.* Extract from the Journal of a Tour in America. By R. RUSSEL,\* Kilwhiss, Fifeshire, Scotland.

FEB. 14, 1855. Before reaching Fort Jackson, a belt of trees, perhaps one hundred yards in breadth, occupied both banks along the river. They consisted of willows, elms, alders and fan palms, which last were from six to ten feet in height. Several full-sized and beautiful orange trees, heavily laden with fruit, were growing within the ramparts of Fort Jackson. After passing the Fort, the river is embanked on both sides, and the land is chiefly in the possession of small proprietors. There are a good many orange-groves along the river: the fruit was all gathered, but the dark-colored evergreen leaves relieved the wintry aspect of the scenery. The trees in the swamps are all deciduous, with the exception of a few live oaks; and the willow alone was putting forth its light green leaves.

For thirty miles above Fort Jackson, small rice plantations are very common on both banks. And it is worthy of observation, that these settlements are comparatively healthy for white persons, who in many cases cultivated the crop with their own hands. The cultivation of the rice crop is effected by a very different process from that which is followed in the tidal swamps of Carolina.

Notwithstanding the swampy nature of the country at the mouth of the Mississippi, as already observed, it is more healthy to the white inhabitants than any other part of the delta. The small rice plantations, even in the lower parts of the river, are more salubrious than the sugar and cotton plantations which are under dry culture. Indeed, in hot countries, it seems to be the universal experience that the cleaning and cultivating of rich alluvial lands render these countries more unhealthy than they were when covered with the natural vegetation. The swamps of the Mississippi, Savannah and all the other southern rivers, as

\* As a learned and useful laborer in science, Mr. Russel has been highly complimented with public demonstrations and substantial testimonials by his compatriots. The amenity and simplicity of his manners cannot fail to create friendship. During last year, he read an elaborate and much commended paper on the Meteorology of the United States and Canada, before the meeting of the British Association for the Advancement of Science.—ED. N. O. MED. & SURG. JOUR.



well as the interior swamps, such as in the Carolinas\* were not unhealthy in their natural state; they have only become so since they were brought under cultivation.

The most satisfactory theory of malaria is that which has been proposed by Liebig in his brilliant chapters on *putrefaction, fermentation and decay*. The miasmata, which produce the various endemic diseases, are ingeniously supposed to exert their virulent influence on the human body by entering the system as gases, and acting on its fluids as a species of ferment. The decomposition of animal and vegetable substances assumes, under certain conditions, very different characters, and gives rise to very different products, which may or may not have a prejudicial influence on the system. It has been generally taken for granted, that marshy grounds are necessarily more unhealthy than dry, and it has been forgotten that numerous exceptions to the rule are found in all countries. The exceptions, however, appear to be all connected by one principle.

Some years ago, I pointed out that it was a well understood fact in Scotland, when some of its inhabitants were very subject to ague, that wet clay soils produced that disease, while wet peaty soils did not. The character of the decomposition of the vegetable matter taking place on clay and on peaty soils being different, the emanations which arise from the former seem to have a deleterious influence on the human system, while the latter are quite innocuous. Indeed, our peat-mosses in Scotland have decided antiseptic properties, which no doubt serve to retard decomposition, and the products of decay are quite peculiar. Among these peculiar products, the vegetable extract that imparts the dark brown color to many of our Highland rivers is well known. Now, it is rather curious that all the swampy districts which are healthy in the Southern States are characterized by the water being colored by this vegetable extract. In the Great Dismal Swamp of Carolina, Sir Chas. Lyell says, "the water is transparent, though tinged by a pale brown color, like that of our peat-mosses."<sup>†</sup> It appears that all the water in the swamps of the Southern States is of the same character, and it is very probable that the fact of its being so is indicative of the vegetable accumulations from which it proceeds undergoing that species of decay which is not an unhealthy one.

Dr. Hooker, in his *Himalayan Journals*, writes: "The climate of Chittur is excessively damp and hot throughout the year, but though sunk amid interminable swamps, the place is perfectly healthy. Such, indeed, is the character of the climate throughout the Jheels, where fevers and agues are rare; and though no situations can appear more malarious to the common observer than Silhet and Cachar, they are in fact eminently salubrious. These facts admit of no explanation in the present state of our knowledge of endemic diseases. Much may be at-

\* It is to be remarked that the climate, in the interior of the swamps, is far from being unhealthy. Lumber men, who spend great portions of the year in it, cutting shingles and staves, testify to the general salubrity of the air and water. The opinion prevails among them, that the quantity of *pine* (?) and other resinous trees that grow there, impart a balsamic property to the water, and impregnate the air with a healthy resinous fragrance, which causes it to be an exception to the usual rule of the unhealthiness of swampy land.—*Ired, a Tale of the Great Dismal Swamp*. By Mrs. Stowe.

† Lyell's *Travels in North America*, vol. I., p. 147.

tributed to the amount and *purity* (?) of the water, the equability of the climate, the absence of forests, and of sudden changes from wet to dry; but such facts afford no satisfactory explanation. *The water, as I have above said, is of a rich chestnut-brown in the narrow creeks of the Jheels, and is golden-yellow by transmitted light, owing, no doubt, as in bog water and that of dunghills, to a vegetable extract, and probably the presence of carburetted hydrogen.*"

The climate of the Southern States of America is in every way the opposite of that of the Jheels, for it is anything but equable; forests abound, and the changes from wet to dry are great and sudden. The only conditions that seem to be common to the healthy swamps of America and of India are large *accumulations* of vegetable matter, resembling our peat-mosses, and the presence of this brown-colored water. Modern geologists have been too hasty in assuming, that the high temperature of the summers on the borders of the tropics is sufficient to prevent the accumulation of vegetable matter, such as is the case in higher latitudes where the natural vegetation in moist situations of one year does not rot away during the next. Sir C. Lyell supposes the shade of trees is essential to the accumulation of vegetable matter in so low a latitude,  $34^{\circ}$ , as that of the Dismal Swamp, where there is a deposit of peat from ten to fifteen feet in thickness. But according to Dr. Hooker, accumulation takes place in the Jheels, which are on the borders of and even within the tropics, where there are no trees. In another part of his "Journals" he writes: "The soil, which is sandy along the Burrampooter, is more sandy and clayey in the centre of the Jheels, with immense spongy accumulations of vegetable matter in the marshes, through which we poked the boat-staves without finding Lot-ton; they were for the most part formed of decomposed grass roots, with occasionally leaves, but no quantity of moss or woody plants." In fact, it appears that these accumulations of vegetable matter, which impart the peculiar tinge to the water in the Jheels, have as close a resemblance to our peat-mosses as the different climatic conditions admit of. The decaying process is arrested in both cases, and hence it is probable that this circumstance is the cause of the Jheels, as well as swamps of the Southern States in their natural condition, like our peaty districts, being comparatively healthy.

But the cultivation of damp soil, by which it is exposed to the atmospheric influences of a hot climate, invariably gives rise to malaria. Even the first effect of draining marshy grounds is to render them less salubrious than they were in their natural state. For this reason, the Campagna in Italy became much more unhealthy, as Dr. Arnold states in his *Roman History*, after its drainage. As already observed the sugar and cotton plantations, in the bottom lands of the Mississippi, are less healthy than the undrained swampy lands in the lower parts of the delta. The malaria of the rice fields of Italy, and of the tidal swamps of Carolina, is of a very deadly character. The practice adopted in these parts of laying the fields dry at intervals during summer and autumn, and exposing them in a moist state to the sun, seems to favor the production of deleterious exhalations. But as Captain Smith, when referring to the experience of India, very properly contends, in his excellent work

on Italian Irrigation, there is nothing deleterious in the mere culture of rice, but in the mode in which the irrigation is managed. Where there is no stagnation of water, the rice fields are not unhealthy. This opinion, I may here remark, is confirmed by the fact that the rice grounds at the mouth of the Mississippi, on which the water is not allowed to stagnate, are more healthy to the whites than the sugar and cotton plantations on the rich alluvial lands.

As we sailed up the river the air was cold, and at night became quite frosty. Next morning, when we landed at New Orleans, the hoar-frost was lying white on the wharves. During the day, however, the sun shone out with great brilliancy, and the temperature was pleasant and bracing. The wintry aspect of vegetation in the swamps of the Mississippi, and the dingy houses of the Crescent city, do not impress one at this season very favorably, after having left so lately gay Havana and its lovely neighborhood.

\* \* \* Yellow fever makes its appearance almost every summer at New Orleans, and commits great ravages among those who are not natives of Louisiana. The last severe visitation of this pestilence occurred in 1853. According to Dr. Bennet Dowler, the population of the city was 150,000 when the epidemic broke out in June, but 30,000 fled to the country, and up to the 1st of November the aggregate mortality from yellow fever was 8451 deaths. At no former period did the malady spread so much over the country as in that year; for all the small towns in Louisiana and Mississippi suffered. If cleanliness would assist in mitigating the ravages of this fearful pestilence, as it certainly does in other epidemics, the city authorities are blamable for the filthy state of the streets. The sewers are open, and the putrid exhalations are very offensive even at this cold season; this state of things is the more inexcusable, as an abundant supply of pure water might be easily raised from the Mississippi, even when the river is low, to sweep the filth of the streets towards the swamp.

NATCHEZ.—At Natchez the features of the country are much changed. At Baton Rouge, 129 miles above New Orleans, the east or left bank of the river is about twenty-five feet higher than the recent alluvial deposit, and belongs to a different geological formation. This formation consists of a compact silicious clay, containing fresh-water shells of the same species as those which are still living. The raised land at Baton Rouge is the first appearance on the Mississippi of the vast plain or table-land that stretches towards the Lakes, with an easy ascent of less on an average than one foot to a mile. At Natchez this formation rises about two hundred and fifty feet above the river, and forms, from being undermined by the river, a precipitous bank of that height, while the west bank is low, and the plantations are protected by levees.

The high table-land forming the precipitous bank at Natchez is broken in the vicinity of the river, as in other Northern States, into a series of rounded eminences, by the action of the streams from the interior of the State. The face of the country, from this cause, is somewhat irregular in the neighborhood of Natchez, but it soon becomes less so a few miles inland.

The same formation that is found in the bluffs at Natchez extends for upwards of twelve miles to the east of the Mississippi, and the surface



soil over this region is one of the finest for the growth of upland cotton in the Southern States. It is upwards of one hundred and fifty miles from North to South, and was originally covered by a magnificent forest of hard wood. The soil is naturally very fertile, consisting of a friable vegetable mould, from a foot to a foot and a half in depth. Indeed, it is one of the richest and most easily cultivated soils that I ever saw.

Rich as these upland soils are when first broken up, they are subjected to certain deteriorating agencies which we hardly know anything of at home. This does not arise merely from the exhausting system of culture that is followed, but also from other circumstances. As was formerly mentioned, the subsoil is a compact sandy clay, which does not crack with drought, and is little pervious to air or water, and for this reason, perhaps, it is not genial to vegetation. Now it must be remembered that the most of the rain in this region falls in heavy thunder-showers; indeed, from three to four inches of rain sometimes fall in one prolonged thunder-storm. The beautiful surface soil is rendered loose and free by cultivation, and these deluges of rain surcharge it with water which cannot descend into the subsoil. At length the water bursts in torrents down the slopes, and carries large quantities of the earth with it into the streams, and thence to the Mississippi. Thus the land would suffer more waste under fallow than under crop, for vegetation assists in checking the destruction. From Natchez to Washington, a distance of six miles due eastward, the most of the country is irregular, and all the sloping land is ruined, for the fine soil has been as completely carried away by washing, as if it had been dissolved. Little remained but the subsoil, which is almost as unproductive as the pine barrens of Carolina.

Almost everywhere in America the quality of the soil is indicated by the kinds of trees which grow upon it. The first settlers found these uplands covered with a magnificent forest, consisting of liquid-amber, elm, ash, white and red oak, cherry, magnolia, mulberry and the wild grape, as well as now and then a solitary pine. The greater part of this fine forest is cleared away, and the land is now under cotton cultivation, or abandoned as exhausted. Here and there, however, a patch of the original forest is to be seen to attest its former grandeur. When the land is first cleared and the brushwood burned, the stumps are allowed to stand until they moulder by natural decay. By the slightest scratching with the plough, this virgin soil has in many instances been taxed with from fifteen to twenty crops of Indian corn or cotton in succession.

Not only is the exhaustion of these soils exhibited in the inability of the land to produce cotton or Indian corn, but the oak, the magnolia, and the other broad-leaved trees that flourish on these soils in their natural state, no longer find those conditions which are favorable to their growth. It is a curious fact, that if the primeval forest is cut down, and the soil is not wasted by washing or cropping, the same trees will again spring up and occupy the ground. But it is still more curious, that totally different trees make their appearance in all cases in which the land has been exhausted by tillage, and afterwards abandoned to nature. In the latter case, the pine and crab-oak alone occupy

the ground. These facts are directly opposed to Decandolle's theory of rotation of crops. The substitution of the pine for the oak and magnolia in the exhausted soils of the Natchez uplands is evidently owing to the altered physical condition of the soil.

Horticultural experience favors this view of the matter. Fruit trees do not thrive well on those exhausted soils, and this cannot be ascribed to mere sterility, for the apple tree flourishes and produces abundance of fruit on the granite gravels of New England, which would certainly be too poor for cotton, though the climate there had been as favorable as in Mississippi State. It is probable that the ungenial nature of the subsoil, arising from its close and compact nature, cannot maintain the magnolia and peach in healthy growth, both of which must send their roots into a medium capable of supplying them with sufficient moisture during the torrid heat of summer. I was informed that neither the peach nor any other fruit tree would thrive on the exhausted soils, however well they were manured, unless the ground was cultivated by the plough or the spade. If the cultivation is neglected, many of the leaves drop off during dry weather; and in no long time after the rains again set in, the fruit becomes quite dropsical, and falls off too. The same kinds of fruit trees do well on unexhausted ground without any cultivation or manure. These facts all point to the view that I have already expressed: that in these instances it is the physical condition of the soils which determines the particular kinds of trees that flourish on exhausted and on unexhausted soils. The pine, it is probable, evaporates less water than the broad-leaved trees, and it can therefore thrive in dry sandy soils, where other trees cannot. Sir Humphrey Davy, I think, says, in some of his lectures on agricultural chemistry, that plants with glossy leaves do not evaporate so much water as others. Is it because the thick glossy leaves of the live oak evaporate little moisture that we find this the only hard wood tree that grows, beside the long-leaved pine, on the dry sands of the pine-barrens?

ART. XVII.—*Trees ; Medical Topography ; Shade ; Sanitaria.*

R. U. PIPER, M. D., author of *Operative Surgery Illustrated*, etc., is now engaged in preparing an illustrated serial work upon THE TREES OF AMERICA, the first number of which has already appeared and has received great commendation from many competent judges both as it regards artistic skill and literary ability.

Dr. Piper says :

“ The rapid destruction of our forests, which is felt by all in the difficulty of obtaining many important kinds of timber, and in the constantly increasing price of wood, for building and other purposes ; and also in its effects upon agriculture in various ways, influencing the atmospheric changes, etc., and through the same means the health of the

country, together with the æsthetic and moral influence of Trees, renders this a subject of national concern.

"The effect of Fruit Trees upon the atmosphere, and through other agencies also upon agriculture being similar to those produced by Forest Trees, will of course give them an important position in this work. As the author himself has had practical experience in the cultivation of both these classes of Trees, and has the promise of aid in this department from the most eminent arboriculturists in the country, he will be able to give information of value upon this branch of his subject.

"The great importance of a work of the kind is admitted by all who have given it their attention. 'The supply of some kinds of valuable wood,' says Downing, 'already begins to fail, and when Canada, upon which we now so much depend, is exhausted, where are we to go?'

This subject which Dr. Piper proposes to investigate, is not only of scientific interest, but it is of great concernment both as an economical and sanitary question to the entire population, particularly in the hot climates of the South, whether in town or country.

The preservation of the venerable forest trees from reckless destruction, and their transmission unimpaired to succeeding generations, will not only enhance the value of the land, but save posterity in at least much of America, from the long labor of centuries as required in the old world, to cultivate these *colossi* of the vegetable kingdom.

Mr. Darby in his old, effete, yet still the best account of Louisiana, indicates portions of the state "where the woodlands are so scarce that the inhabitants will be obliged, in the process of time, to plant and rear forest trees."

The following interesting letter from Dr. Piper is published with the expectation that the readers of this Journal will be able and willing to investigate the topographical and sanitary questions referred to in his subjoined letter, in a more satisfactory manner than my own personal observations, will warrant me in doing. Contributions to this Journal upon Medical Geography, by careful observers, will, it is believed, find many appreciative readers, and will be likely to possess a permanent interest for future reference, particularly in Louisiana which beyond all other countries is destined soon or late, to undergo great physical modifications by artificial means, such as the drainage, reclamation, and cultivation of its rich, yet annually inundated alluvial lands, so productive of the chief staples of the world, as cotton, rice, sugar, etc. The medical history of this, its transition state, must to some extent be new as well as useful, and even paramount in directing the course of improvements and transformations both urban and rural, general and local. A man of genius in engineering, drainage, hydrography, geology, political economy and sanitary science is required by the wants of Louisiana. *Non verbis, sed factis.*



NORTH WOBURN, Massachusetts, Jan. 27, 1857.

DR. DOWLER :

Dear Sir :—Timothy Flint, in his “Valley of the Mississippi” speaks of the prophylactic and curative effect of the atmosphere of the pine woods in the vicinity of Lake Pontchartrain, in cases of yellow fever; he says that during the prevalence of this disease many of the inhabitants were accustomed to retire to these woods and that here they were safe from its attacks. Whether the “march of improvement” which ruthlessly lays the axe to everything which stands in its path, has spared these pine forests I am not informed, and it is the object of this communication to ask you this, and also to solicit what other information you may be able to give me upon the idea suggested above, and others linked to it. I have myself sent several patients apparently in an advanced stage of phthisis pulmonalis into the pine woods with the apparent effect of producing a permanent cure. One case I well remember of a young man who was so far gone apparently, as to be given over by several physicians. He had lost his voice. By my advice he went into the pine woods of Maine and stayed one year living with the “lumber men,” etc. He came back entirely well, and has remained so for a number of years. I may also add that taking a hint from this, I am now using in my practice preparations of pitch and tar in diseases of the mucous membrane of the air passages and also of the alimentary canal, with very good effect. Indeed in cases of cough arising out of “colds” which are so common with us here, I expect an entire cure in the course of two or three days. I have also seen it stated that these preparations have been used with good effect in cases of spasmodic cholera.

But the principal object of this communication is to obtain information upon the effect of trees upon the atmosphere either as regards health, or upon climate generally, and from your reputation as a close observer I am sure I shall not ask in vain. The Medical Times takes the ground that the health of cities would be much benefited by the “planting of the streets with trees.” “They would not only help to free the air from the excess of carbon but from the ammonia.” “Plants require as steady a supply of ammonia as they do of carbonic acid, and in the midst of luxuriant vegetation the putrid emanations from the dung-heap and cesspool are rendered innocuous. If the ammonia generated in our cities is not frequently dispersed by currents of air, or made use of by the vegetable world, the air is contaminated and the blood of those who respire it is brought in the precise condition observed in those who are affected by the low fevers so peculiarly prevalent in crowded, filthy lo-

calities." Witness also the effect of decaying vegetation in a flat country devoid of trees.

The Pontine marshes are a good illustration of this. A single night passed in the midst of their rank vegetation in the season of the malaria, is, as you are aware, almost certainly fatal. While in the tangled thickets of the Dismal Swamp the wood-cutter and the fugitives enjoy good health, so in Maine during the heat of summer, even the enfeebled denizens of the city, take long excursions in the forests, exposed to wet from the dews and rains, and from wading in the ponds and rivers in pursuit of game and fish, sleeping in the woods with no other covering but a hastily built hut of boughs, and notwithstanding these, and many other hardships for which we should think them but poorly prepared, they invariably come home with renewed health and vigor.

I send you with this a circular, which will show you the use I intend making of any information you may have the goodness to send me. I hope the object will seem to you of sufficient importance to induce you to aid me in it yourself, and to enlist others as you may have opportunity.

Your obt. servant,

R. U. PIPER.

The following extracts from the great work of the late Dr. Drake, recently published, on *The Diseases of the Mississippi Valley*, are illustrative of the topics alluded to by Dr. Piper, relating as they do to the littoral and the interior of Louisiana, Alabama, and Florida, and the bays of the Gulf of Mexico indenting the same :

*Shade Trees.*—Referring to health, how near should shade trees be planted to a dwelling? Their effect, when so near as to overshadow the roof and walls, or the latter only, is no doubt to keep them cool ; but they increase the dampness, by preventing the drying effect of the sun, after rains and heavy dews ; and in the south, its most observing physicians and planters, are opposed to them, and prefer the verandah ; which, I have no doubt, is a correct decision. It is, however, a great advantage to have trees near a house, so that they may shade the ground around it, and thus prevent the reflection and radiation of heat against its walls. On the northern side, they may be planted nearer than on the southern, as they cannot there overshadow the building. Trees, in the neighborhood of a dwelling, when not too near, not only do good in the manner just pointed out, but they protect the family, when they go out for recreation, or the ordinary business of the house ; and every one must regret their wanton destruction around most of the country houses of the Valley. With the motives for their preservation, which good taste and the love of beautiful scenery would suggest, this work has no concern ; but I find enough, of a purely hygienic kind, to justify a protest against the destruction of what nature, in her wise economy, has provided, to shield the earth and its inhabitants, its tender grass and delicate flowers, from the scorching rays of a summer sun.

Shade trees should be cultivated in our towns and cities more extensively than they now are ; but those which grow to a great height, should not be chosen, because they render the walls and roofs damp. The object is, to shade the side-walks. Very broad streets or avenues should have rows of larger trees in their centres ; for, at such a distance, they do not produce the injury just mentioned, while they keep down the heat of the surface, diminish radiation, and protect those who are passing. The towns of the south are generally well shaded, either with sheds and awnings, or with trees. The pride of China (*Melia azedarach*) is the favorite, up to the latitude of thirty-three degrees, above which it does not bear the colder winters ; then the resort is to the white-flowering locust, (*Robinia pseudo-acasia*) with which, in higher latitudes, are blended the water maple (*Acer rubrum*), white elm (*Ulmus pendula*), catalpa (*Bignonia catalpa*), and sycamore *Platanus* (*occidentalis*), all of which grow too large for narrow streets. But within the last few years, the calycanthus, a foreign tree, has been introduced, and become a general favorite.

The planting and cultivation of trees, on the public squares of our cities, has not received the careful attention which their value demands. They maintain a cool place, to which resort may be had, by those who suffer from excessive heat, either in the streets, or in badly constructed houses ; and should be regarded as among the means of health and comfort for the people of every city.

To conclude, trees should be left standing between ponds or marshes and the family residence. There are many evidences that they exert a protecting summer and autumnal influence ; especially when the source of disease is to the south or west of the town or dwelling.

*Pine Woods.*—The medical topography of a country would be incomplete, if it did not comprehend specimens of its healthy localities along with the sickly ; as it is by comparing them, that we arrive at a knowledge of the influence of topographical conditions, under the same climates. If the low and alluvial or marshy tracts, around this part of the Gulf, are infested with autumnal and yellow fevers, there is an adjacent plain, the height and composition of which, give it a decided character of salubrity. This tertiary or post-tertiary deposit of sea sand and clay, has been already referred to in the descriptions of Pensacola and Mobile. It borders the north-eastern segment of the Gulf, from Lake Pontchartrain, or rather from the Delta of the Mississippi to Pensacola ; and consequently lies in the rear of all the places which have been described. Between the city of Mobile and Pensacola, its altitude is one hundred and fifteen or twenty feet ; but farther back from the coast, it rises higher. The rivers which flow through it to the Gulf, are the Perdido, between Pensacola and Mobile, and the Pascagoula and Pearl, between the latter and Lake Pontchartrain ; all of which are edged with swamps, overshadowed with cypress, sweet gum, and other semi-aquatic trees ; decorated with a sombre drapery of long moss, (*Tillandsia usneoides*.) The prevailing and characteristic forest tree of this plain, is the long leaf pine ; which, in many parts, as between Pensacola and Mobile, forms a dense and lofty forest, to the exclusion of almost every other tree. Straight, and generally destitute of limbs



to a great height, these pines present to the eye a vast system of intercolumniation, which, seen at night, by the running fire that occasionally consumes their shed cones and long leaves, with the dry grass among which they have fallen, presents a grand and striking spectacle. This conflagration is one cause why so little *humus*, or mold, accumulates on the surface ; another is that but little mold is generated by the *exuvie* of a pine forest, and hence the surface remains barren. Where the plain is too level for the water to flow off, it has collected in small basins, and favored the growth of a more varied vegetation, the remains of which have contributed to arrest its descent into the earth ; and thus, in the midst of the pine desert, the eye is relieved by oases of flowering shrubs and annual plants, from which rivulets are seen to flow and congregate into larger streams. In descending from the plain, they readily cut channels through its loose strata ; from which there likewise issue copious springs of pure water, the quality of which has been already given, when speaking of the Pensacola and Mobile fountains.

Such are the celebrated *Pine Woods*, to the protecting influence of which the people of New Orleans and Mobile commit themselves for safety, in yellow fever seasons ; expecting to enjoy an equal immunity from intermittents and remittents. Thus, in the region we are describing, the sweet gum and cypress, with their festoons of moss, are the symbols of deep soil, foul surface, impure water, vegetable decomposition, and fevers ; while the long-leaved pine, symbolizes sterility, dryness of surface, gushing springs of pure water, and sound health.

Soon after the publication of the first volume of Dr. Drake's work on the Valley of the Mississippi, the great epidemic invaded even "the celebrated Pine Woods, to the protecting influences of which," says Dr. Drake, "the people of New Orleans and Mobile commit themselves for safety, in yellow fever seasons." Without affirming the insalubrity of the swamps, or denying the salubrity of the Pine Woods of Louisiana as a general rule, it may be safely asserted that in the hot season, whether there be any yellow fever or not, the people of New Orleans and Mobile, less enamored with "the long-leaved, dense, lofty, straight intercolumniated, cone-shedding pine desert, relieved by flowering shrubs, rivulets, and copious gushing springs of pure water," fly to the crowded, hot hotels or sultry watering places in the North, instead of summering upon the piny plateaux fanned with alternating land and sea breezes, within the hearing of the city night guns.

Shade of Drake ! these sublime coniferous pine-forests, fit haunts for people seeking to escape the stunning noise and oppressive heat of city life, are not in fashion. Their terebinthine odors, healthful as those

"From the spicy shore  
Of Araby the blest,"

"Waste their fragrance on the desert air."

The good doctor, a lover of nature, has ideally peopled the pine forests as they should be in the hot season, although practically they are

generally ignored by the urban population of the South. Even Dr. Drake appears to ignore the vast Magnolia-forests, consisting in some districts, almost entirely of these trees of colossal size, great altitude, being large leaved, ever-green, transcendently flowered, covering with their dense shade and perfuming with their sweet odors, upon the highlands beyond the lakes, and almost within sight of the spires of New Orleans. The *Magnolia grandiflora* peculiar to America and Asia, though cultivated extensively elsewhere, attains to its greatest perfection and grandeur in the States lying upon the Gulf of Mexico.

These magnolia woods, sweet scented and colossal flowered, extend with interruptions from east to west throughout the state. This the grandest type of the *Magnoliaceæ* is little honored in its own country by the utilitarians. An American writer upon the geography of Louisiana, speaks thus slightly of the *Magnolia grandiflora* : "The magnolia deserves less attention than most other forest trees, from the uselessness of its wood for most purposes to which other timber is appropriated." A foreign writer says that the sweet scent of the magnolia may be smelt at a distance of three miles, but does not estimate the commercial value of its odor !

Mr. Darby early in the present century maintained from personal observation that the highlands upon the Gulf of Mexico afforded salubrious retreats, particularly those on the Bays of Biloxi, St. Louis, and Pascagoula, for the citizens of New Orleans "desirous of avoiding the real or imaginary dangers of a summer residence in a large commercial city on the banks of the Mississippi."

But neither Darby nor Drake is reliable authority in the æsthetics of fashion. The *sanitarium* of a magnolia or pine forest is viewed practically as a poetic invention fit for Virgil's rural songs :

"Here cooling fountains roll \* \* \*  
 Here woods, Lycoris, lift their verdant heads,  
 Here could I wear my careless life away,  
 And in thy arms insensibly decay." Ecl. X.

"Is there no balm in Gilead"? Is there no *sanitarium* upon the shelly-shores or forest lands of the South?

ED. N. O. MED. & SURG. JOUR.

## REVIEWS.

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REV. I.—*Medical Notes and Reflections*: By SIR HENRY HOLLAND, BART., M. D., F. R. S., etc., etc., Fellow of the Royal College of Physicians, Physician in Ordinary to the Queen, and Physician in Ordinary to His Royal Highness Prince Albert. From the third London Edition. Pp. 493. 8vo. Philadelphia: Blanchard & Lea. 1857.

THIS is a handsome book, imbued with respectability, suavity and courtly dignity, worthy of a court physician, being elaborate without originality, learned without a positive philosophy, thoughtful without great thoughts, orthodox without bigotry, authoritative without dogmatism, ratiocinative without an overpowering logic, exuberant in common places yet without the expansive generalizations characteristic of a work of genius destined to immortality. Nevertheless, Sir Henry has displayed great judgment in selecting the most common every day subjects for investigation. These topics, which have been too much neglected, by ambitious authors he has treated with singular patience and ability. The asperities of controverted points are softened by his persuasive manner and suggestive mode of argumentation. If the reader is not always convinced he would like to be convinced by so kind and venerable a master.

The vocation of authorship is various. It requires neither the genius of Harvey nor the genius of Bichat to make a good book, and such Sir Henry's undoubtedly is. His work, written in a chaste style, comprehending heterogeneous materials, is "permeated with a maturity of thought. If the reader is not dazzled with brilliant coruscations, he will find a clear stream of knowledge shimmering with golden grains of intellectual wealth.

If these "Notes and Reflections" contain little that is new, they contain much solid information, interspersed with ingenious speculation, the results of nearly forty years' investigation pertaining to the internal and external medical life.

The topics discussed under the unpretending title of "Notes and Reflections" are indicated by the following table of contents:

Medical Evidence.—Hereditary Disease.—Method of Inquiry as to Contagion.—Diseases commonly occurring but once in life.—Connection and Classification of certain Diseases.—Disturbed Balance of Circulation and Metastasis of Disease.—Influence of Weather in Relation to Disease.—Diet and Disorders of Digestion.—Gout as a Constitutional Disorder.—Morbid Actions of Intermittent kind.—



Medical Treatment of Old Age.—Epidemic Influenzas of late years.—Prognosis as a part of Practice.—Pain as a Symptom of Disease.—On Points where a Patient may judge for himself.—Methods of Prescription.—Internal Hemorrhages and Morbid Secretions.—Some supposed Diseases of the Spine.—Hypochondriasis.—The Exercise of Respiration.—Some points in the Pathology of the Colon.—Abuse of Purgative Medicines.—Bleeding in Affections of the Brain.—The Use of Emetics.—The Uses of Diluents.—Sudorific Medicines.—The Use of Opiates.—Mercurial Medicines.—The Use of Digitalis.—Antimonial Medicines.—The Hypothesis of Animalcule Life as a cause of Disease.—On Cholera.—Conclusion.

Sir Henry has with an infinite toil, prolonged through an extended professional life, built and polished a book, which if not the best ever written is far from being the worst octavo of this day and generation, and yet, the work is not finished, because it has no index !

The deliberative tone, the asking without the answering of many questions, the environment of fundamental questions with an array of qualifying exceptions and an exuberance of book-learning, displayed in these Notes may or may not have been written by a man deeply versed in actual practice, in personal observation, in experimental researches, and in verifying old and new facts and deductions. This book shows that Sir Henry is a scholar, but is he an experimentalist? The day is nearly past for the reading of such books as contribute nothing to experimental science but what had been previously published a thousand times. New deductions, new or the verification of old experiments, are the most acceptable and essential elements in book-making for the present, or indeed any epoch. The surest way to get rid of erroneous theories is to expose false facts. Hence the necessity of experimental and numerical and analytical reasoning. Nature must be unceasingly interrogated. "Nature," says Goethe, "is always true, earnest, and severe, she is always right, and all failing and error must belong to man."

Although this is not a systematic work, it is not, for that reason, objectionable. The science of medicine is not yet so perfect as to enable even the most able investigators to establish an all-comprehending system theoretical and practical, in physiology, pathology, and therapeutics. Special contributions, essays, and monographs, rather than systems, founded on observation and experiment, and tested by the Numerical Method, are at present the most available and safe routes known.

The practitioner of medicine is, or ought to be, as truly an experimenter as a vivisectioner. The practical man, not the man of the most practice, is, or ought to be, an experimenter in the best sense of the term. He is not a blind unreasoning routinist. Every case is to him as a new experiment upon which he converges the light derived from his own experience and that derived from the experience of others. The practical

routinist begins, continues, and ends in the same narrow circle, unenlightened by his own experience how extensive so ever that may be.—His progression may be rapid, yet like that of the circus rider, he travels circularly following his own track.

But passing from these generalities, it may be proper to glance at a portion of the above named book without attempting to review it in a formal manner.

In his first chapter (on medical evidence) Sir Henry says : “ During the last thirty years, omitting all lesser instances, I have known the rise and decline of six or eight fashions of medical doctrine or treatment ; some of them affecting the name of systems, and all deriving too much support from credulity or other causes, even among medical men themselves.” 19.

The learned author evidently has no faith in animal magnetism, clairvoyance, lucidity, etc., and *à fortiori* he must be distrustful in the table-turning, spiritual knockings, spiritual writing, spiritual media, etc., which are peculiarly American institutions, little known in the “ old countries ;” indeed, the author appears to be ignorant of these momentous revelations or rather revolutions in physics, physiology, medical practice and medical science, now extended beyond this earth and the tomb, through half a dozen spheres which neither Newton nor La Place ever dreamt of in his philosophy.

In his able chapter on Hereditary Disease, Sir Henry alludes incidentally to Trismus nacentium—a very fatal disease in the climate of New Orleans, though as he shows, far less appalling than that malady appears to be in the cold climate of Lapland. The author says, “ when in Iceland, in 1810, I had the opportunity of collecting some facts as to the singular frequency of this disease in the Vestmann Isles, on the Southern coast of this Island. On these desolate rocks, the population of which does not exceed 160 souls, I found that, in a period of 25 years 186 infants perished of this disorder, under the age of 21 days ; of whom 161 died between the 4th and 10th days after birth ; 75 on the 8th day. Though the condition of life of these poor people is singularly destitute, fish and eggs of sea-fowl being their sole aliment, it is not so different from that of the Icelanders of the mainland as to explain the frequency of this fatal disorder amongst them.” 45-6.

In the chapter on Diet, Sir Henry finds occasion to compliment the physicians of the United States : “ The physicians of the United States, who now contribute so eminently to medical science in all its branches have added to our knowledge on this subject. And their writings have the greater interest, as stating the result of manners of life differing in several respects from the ordinary habits of our own country, and of

other parts of Europe." 172. There can be no need in the world to compliment English physicians in return, seeing that no compliment equals that of imitation, which latter, is prevalent among American physicians to a lamentable extent, while all other classes from the mechanic to the statesman rival the Old World, proudly challenging competition. There is a considerable class of annotating, imitating, home-slighting physicians in this Republic, who, according to the maxim of Rochefoucault, ought to be much beloved in foreign lands. That maxim in English reads thus: "Those who imitate us we like much better than those who endeavor to equal us. Imitation arises from esteem, competition from envy."—EDITOR.]

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REV. II.—*Transactions of the American Medical Association.* vol. IX.  
Pp. 907. 8vo. 1856.

(Continued from page 587.)

IN the January number of this Journal, we maintained that free charters, free graduation and free practice necessarily originate in our free institutions. If these immunities be an evil, so far from being remediable at the hands of the profession or any association it is capable of originating, it could not be rendered so by a ballot-box majority formally rendered. The minority in such cases would neither waive their pretensions nor be required to do so. But our state of freedom gives rise to another remarkable immunity which comes in to the aid of other causes in defining the position of the profession in this country, and that is, the freedom of pecuniary compensation. Our courts have decided that it is not necessary in the party who brings an action for compensation for medical services, that he should be the holder of any particular voucher or evidence of his relation to the medical profession; nor will the court entertain the question of regularity or irregularity in the plaintiff as a practitioner. Under a stringently *worded* law regulating the practice of medicine in this State, our courts have refused to allow the patient to avoid payment on the plea of want of license on the part of the practitioner. Such avoidance of contract has even been held to be unconstitutional. The simple employment of the party offering to prescribe, and the attendance of that party carries with it the condition of compensation. The individual who employs an ignoramus or quack acquires no right to play fast and loose—no equitable right exists on the part of the patient to stultify and discredit his own judgment for no higher purpose than the mere avoidance of compensation by belittle-



ing the person whom he has elevated, and with whom he has contracted to give him physic. If the prescriber, how irregular soever he may be, can show that he has been employed, and that he has rendered attendance, the question is not whether compensation shall or shall not accrue, but the case is simply a *quantum meruit*? And here lies another radical exemplification of "free trade in physic," in which all idea of exclusive claims of the regularly constituted medical profession is judicially ignored.

From what we have said, therefore, it must be deemed a matter of the first importance, in view of all "reform" movements in the profession, to duly appreciate and take into consideration the peculiar relations which exist under our institutions, between the profession and the people; to acquiesce at once in what may be the fixed purposes of the people, and in what is uncontrollable, however objectionable it may appear; to study well all the advantages and disadvantages of our position in the premises, and to turn to good account the former, and to correct as far as possible the latter.

We are convinced that the American Medical Association have completely failed on these points, and that they have effected nothing, nor can they effect anything of their original scheme of reform. Indeed, judging from the volume before us, as evinced at page 20, we should conclude that "reform" in the Association has died a suspicious death, or that its vitality is merely "presumed." We have a little galvanism thus applied in the form of a "presumption" at the hands of Dr. Zina Pitcher, though we apprehend that "this is the last of life," at least. The italics are ours.

"We *presume*," says the committee report, "the objects for which this organization was effected *have not been lost sight of* by a majority of its members; neither can it be pretended that those purposes have been so far accomplished as to justify us in laying it aside, or of directing it from its original design."

The ghost of "Reform" appears here, it is true, but the "perturbed spirit" appears in vain:

"HAMLET. What would your gracious figure?

Do you not come your tardy son to chide,  
That lapsed in time and passions, lets go by  
The important acting of your dread command?  
O say!

GHOST. Do not forget. This visitation  
Is but to whet thy almost blunted purpose.

\* \* \* \* \*

HAMLET. Why, look you there! look how it steals away!

\* \* \* \* \*

Look where he goes, even now, out at the portal."

The status of the profession in our country is confessedly no better than it should be. There seems, however, to be no use of complaining unless the complaint is accompanied with some feasible scheme of rendering it better. The following denunciation is embodied in the same committee report :

"Your committee feel that the profession has no right to rail at the public for misappreciation of it, so long as we continue to admit men into its folds destitute of that knowledge, both in nature and degree, necessary to make a decent appearance in general society, or to fit a man for the ordinary and less responsible pursuits of life." p. 21.

Alas ! gentlemen, even if you really were sincerely in favor of the exclusion of such men, nothing you can say or recommend will be of any avail in determining who shall or shall not be "admitted into the folds" of the profession. We have before us the statistics of the numerical attendance in all the medical schools in the United States for 11 years.—The series is broken, but it sufficiently proves the fact, that if the American Medical Association has had any effect at all on the number admitted into the folds of the profession, it has been to greatly augment that number, in which according to its own showing there will be found so many examples of "deficiency of knowledge both in nature and degree." We give the following figures :

Years.	Total Students.	Years.	Total Students.
1832.....	1931	1850.....	4505
1843.....	3175	1851.....	5015
1846.....	3977	1852.....	4859
1847.....	4247	1853.....	5035
1848.....	3727	1856.....	5100
1849.....	3465		

It will be seen, by estimating from the above table, that the average attendance during the first four years of the Association's existence, was 3986, and that the average attendance during the four years last designated above was 5005, and that the total attendance during the years 1851-2-3-6 was more than 25 per cent. greater than the total attendance during the years 1847-8-9-50. We have therefore proof of the following positions : 1. That the ratio of admissions of students into the medical colleges is steadily increasing, and ; 2. On the authority of the Association itself, that these institutions "*continue* to admit into the folds of the profession, men destitute of that knowledge both in nature and degree, necessary to make a decent appearance in general society, or to fit a man for the ordinary and less responsible pursuits of life."

Nine years of apparent reform agitation, ought to convince the Association as fully as they could be convinced by any greater number, that

in this country the entrance into the folds of the profession is too wide a pass to admit of being commanded.

The admission of students into the schools, and the graduation of the same sometimes becomes an item in the material prosperity of a city. Of the 5100 students of medicine in 1856, Philadelphia secured to herself about one-fourth of the whole, say 1275. The average amount expended by each student during the four months on direct account of college attendance, with its wide margin for personal contingencies, will be nothing short of \$500 each, amounting in this short period to \$637,500. The whole number that have graduated in the medical colleges of the United States is 20,023, of which 8621, or over 43 per cent. have graduated in Philadelphia, and on the above estimate, supposing each of the two collegiate sessions required for graduation, to cost \$500, it will be seen that at least \$8,621,000 have been left in that city to pay the expenses of medical students. The dealings of these graduates and students in that city on account of drugs, surgical instruments, medical books, etc., growing indirectly out of the numerical force that assembles in her medical schools, must be estimated by millions.

In procuring charters, and affording every facility for those who desire "to enter the fold of the profession," Philadelphia has acted with greater wisdom and discretion than any other city in the Union. She in good time, "while men slept," saw the irresistible tendency of our free institutions, and turned it, *ad eundem*, to good business account. It was in vain that the University arrayed herself against the chartering of the Jefferson Medical College. The former institution was soon outflanked, by the ruling and life-giving power of numbers, and tickets were sold at 25 per cent. discount on former rates. Other charters were soon demanded and obtained, under the earnest protest of both these powerful institutions. The city was too keenly alive to her commercial interests to limit the right of teaching to a pair of faculties. It was the determination of her people that a large graduating business should be done in their midst. Other schools came into existence, and the competition for numbers was fairly opened. It is not now likely that Philadelphia will henceforth give countenance to any reactionary measure that will tend to "reform" out of town any portion of her transient population that pay so well as those who are knocking for "admission into the fold of the profession." There is virtue in professors, but it is merely human virtue; and it would be more than human virtue in the "schoolmen" to sacrifice their own personal interests in direct opposition to deliberate public opinion. Both the power and will are wanting. Are not both wanting in the American Medical Association itself?



"From the early records of the Association," continues the committee report aforesaid, "it appears that this conviction" [the conviction implied in the last quoted paragraph] "on the part of the profession in the United States connected with the design of reforming, in certain particulars, the medical schools of our country, led to its organization in 1847. And until its mission in both respects has been accomplished, the committee would reluctantly recommend the adoption of any measure tending, in their judgment, to divert it from the original design of its creation."

We have quoted this paragraph in order to show that in what we have said we have not been dealing with shadows, but with the very purposes which gave birth to the American Medical Association. In 1847, men disgracefully ignorant were "admitted into the fold of the profession," and it was proposed to reform the schools and exclude them. In 1856, we are told by the Association itself, that the schools "*continue* to admit men who cannot even make a decent appearance in general society, etc.," that the schools have not been reformed, and that the mission of the Association remains to be fulfilled.

Now, we are far from thinking that the Association has continued to meet in vain, and that important results have not grown out of its existence; but in relation to its original purposes, as here enunciated, we regard them, both theoretically and practically, as quixotic to the last degree. We trust that at their coming session, the Association will abandon the subject of schools and the dignity of "the diploma." Ours has been too long a school-ridden profession; "the diploma" will soon be on a par with Queen Anne's farthings after they ceased to cure the ague, and the high-minded and ambitious student will have too much self-respect to appreciate himself on the basis of a mendacious Latin parchment, in which men, who, as the Association truly tell us, are too ignorant "to make a decent appearance in general society," are mystified under the appellation of *virī ornatī*. It is to be hoped that the good sense of the schools will speedily lead them, in respect to their diplomas, to abandon the bombast of their Latin formulæ, worthy only the "father of lies," and too monstrous to be clothed in a living vernacular, and to render a certificate in plain English that the candidate has been admitted to the degree of doctor. Let us hear no more of "*omnes eas artes quī optimum quemque ornant*," in connection with men who are too ignorant "to make a decent appearance in general society."—Here is a "reform" which is practicable, and worthy the advisory interposition of the Association.

It is one of the inevitable consequences of our political and social condition that the widest contrasts as to capacity and education should

show themselves in all the vocations and positions in life, and that men of inferior as well as superior qualifications should occupy the most responsible positions, even amongst the highest in the government. Mediocrity and inferiority have a commanding influence over the medical profession in our country, and they are well satisfied with the smattering of medical science that is imparted in our schools. The student who is aiming at eminence, however, passes through these schools without self-gratulation. He well knows that he must pass from these strongholds of mediocrity, and take care of himself by seeking other and more direct resources. He must again become a pupil, and the medical congress cannot provide for him.

M. MORTON DOWLER, M. D.

[To be continued.]

## Editor's Office.—Notices.

MARCH, 1857.

### COMMUNICATIONS RECEIVED.

S. A. CARTWRIGHT, M. D.

W. L. GAMMAGE, M. D.

J. D. HARPER, M. D. } From the Committee on Essays of the Medical Association of North Louisiana.  
 DRURY LACEY, M. D. }

### NEW MEDICAL JOURNALS.

*North American Medico-Chirurgical Review*; Bi-monthly. Edited by Prof. S. D. GROSS, M. D., and Prof. T. G. RICHARDSON, M. D. Philadelphia.

*Gazette Médicale de L'Algérie*. Edited by Dr. A. BERTHERAND. Algiers, Africa.

### BOOKS AND PAMPHLETS RECEIVED.

*Obstetric Tables*; By Dr. PAJOT, Agrégé Professor to the Faculty of Medicine, Paris; translated from the French, and arranged, by O. A. CRENSHAW, M. D., and J. B. McCaw, M. D., Richmond, Va.; with three additional Tables on the mechanism of natural, unnatural and complex labor, by NATHAN P. RICE, M. D. New York. Large 4to. Richmond: 1856. From Mr. J. B. Steel, Bookseller, Camp street, New Orleans.

*Malformation; Ovarian Tumor, (106 lbs.) and Other Contributions*; By GEORGE D. GIBB, M. D., M. A., F. G. S., etc. Pp. 15; plate. London: 1856. From the author.

*The Half-Yearly Abstract of the Medical Sciences*; Edited by W. H. RANKING, M. D., Physician to the Norfolk and Norwich Hospital, and C. B. RADCLIFFE, M. D., Assistant Physician to, and Lecturer on Materia Medica at, the Westminster Hospital; No. XXIV. July to December, 1856. Pp. 276; 8vo. Philadelphia; Lindsay & Blakiston. 1857. From the Publishers.

# TABLE OF CONTENTS.

## ORIGINAL COMMUNICATIONS.

ART. I.—On the Purulent Ophthalmia of North-Eastern Texas ; By J. A. Barry, M. D., of Clarksville, Texas.....	593
ART. II.—Fragmentary Notes on Pathological Anatomy ; By Bennet Dowler, M. D. (Continued from the last number).....	599
ART. III.—On Cholera ; By Bennet Dowler, M. D.....	620
ART. IV.—Treatment of Yellow Fever. Dr. Dufour's Mode. Translated from the French Manuscript, for the New Orleans Medical and Surgical Journal, by J. P. Barbot, Apothecary.....	640
ART. V.—Post-mortem Examinations in the Yellow Fever of Natchez ; By Samuel A. Cartwright, M. D.....	649

## PROGRESS OF MEDICINE.

ART. I.—Typhus Fever ; Translated from the French, for the New Orleans Medical and Surgical Journal, by J. P. Barbot, Apothecary.....	661
ART. II.—Tableau of the Use of Iodine in Scrofula, and the symptoms and maladies which may complicate themselves with that disease : By M. Martin Lauzer. Translated from the Journal des Connaissances Médico-Chirurgicales, of July, 1856, by M. Morton Dowler, M. D., New Orleans. (Concluded from page 520).....	664
ART. III.—Treatment of Fevers.....	671
ART. IV.—Treatment of Remittent Fever.....	674
ART. V.—On Granular Ophthalmia ; By James Blake, M. D., F. R. C. S.....	676
ART. VI.—Dysentery : By S. P. Crawford, M. D., of Greenville, Tennessee.....	681
ART. VII.—Cholera Infantum. [Baltimore Pathological Society.] Reported by Dr. Van Bibber, Virginia Medical and Surgical Journal.....	684
ART. VIII.—Varieties of Thrush ; its progress and duration. Translated from the Journal de Médecine de Bordeaux, for the New Orleans Medical and Surgical Journal, by J. P. Barbot, Apothecary. Infantile Thrush, by Dr. Lebarillier, Physician to the Bordeaux Foundling Hospital. (Continued from page 540).....	686
ART. IX.—On Hysteria, its Hereditary Transmission, and Curability by Marriage. Translated and condensed from the Gazette Hebdomadaire de Médecine et de Chirurgie, Paris, November 21st, 1856, for the New Orleans Medical and Surgical Journal, by J. P. Barbot, Apothecary.....	692
ART. X.—On Hernia.....	698
ART. XI.—1. Stricture of the Pylorus. 2 and 3. Constitutional Vomiting.....	700
ART. XII.—Double Stricture formed by swallowing Strong Lye ; By Isham G. Hearn, Waynesboro, Wayne county, Tennessee.....	703
ART. XIII.—Retention of Urine from Stricture—Syme's Operation.....	704
ART. XIV.—The Reduction and Diagnosis of Dislocation of the Femur.....	705
ART. XV.—Extra-Uterine Pregnancy—Cæsarian Sections.....	707
ART. XVI.—Pharmacy as a Business ; By Edward Parrish.....	710
ART. XVII.—Is the Water of the Lower Mississippi Medicinal.....	717
ART. XVIII.—Topographical and Sanitary Observations on the Delta of the Mississippi. Extract from the Journal of a Tour in America, by R. Russel, Kilwhiss, Fifeshire, Scotland.....	718
ART. XIX.—Trees : Medical Topography ; Shade : Sanitaria.....	723

## REVIEWS.

REV. I.—Medical Notes and Reflections : By Sir Henry Holland, Bart., M. D., F. R. S., etc., etc., Fellow of the Royal College of Physicians, Physician in Ordinary to the Queen, and Physician in Ordinary to His Royal Highness Prince Albert. From the third London edition. Pp. 493 ; 8vo. Philadelphia : Blanchard & Lea. 1857.....	730
REV. II.—Transactions of the American Medical Association, vol. IX. Pp. 907 ; 8vo. 1856. (Continued from page 587).....	733



*Report of the Board of Managers of the Missouri [State Lunatic Asylum.* Pp. 43. Jefferson City. 1857.

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## ADDENDUM.

THE SCIENTIFIC CONGRESS OF GERMANY.—The first annual session of the Scientific Congress of Germany was held at Leipzig in 1822. Its last session, held at Vienna, September, 1856, was composed of 1500 members. The next meeting is fixed at Bonn. At its origin and during its progress, this Society was and is remarkable for the predominance of its medical members and its medical topics, presenting an almost fundamental antithesis to both the British and American Associations for the Advancement of Science, as the following enumeration of the scientific Sections and their Chairmen at the recent session will sufficiently attest.

*Section of Medicine*—SKODA; *Section of Surgery, Ophthalmology and Midwifery*—DUMMREICHER; *Section of Anatomy and Physiology*—ROKITANSKY; *Section of Mineralogy, Geognosy and Palaeontology*—HAEDELER and LEYDOLT; *Section of Mathematics and Astronomy*—PETZVAL; *Section of Zoology and Comparative Anatomy*—L. FITZINGER; *Section of Physics*—ETTINGHAUSEN; *Section of Chemistry*—DE RETTENBACHER; *Section of Botany and Vegetable Physiology*—FENZL; *Geology and Mineralogy*—A. KUNZEK.

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
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# THE NEW ORLEANS MEDICAL AND SURGICAL JOURNAL

FOR MAY, 1857.

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## ORIGINAL COMMUNICATIONS.

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ART. I.—*Scarlet Fever* By JAMES D. HARPER, M. D., Minden, Louisiana.\*

THE subject of my essay is one abounding in diversity of sentiment, eliciting conflicting opinions from almost every practitioner of medicine : I allude to Scarlatina. This disease is of no frequent occurrence in North Louisiana, and it is rarely the case that any *one physician* has the opportunity of witnessing more than four or five epidemics, though engaged in an extensive practice for many years in succession, except it be in one of our large and densely populated cities, where the causes of disease are rife, and continually operating.

The purpose of my essay is to present to this Convention my experience and observations in regard to Scarlatina, as it occurred near Minden, in 1854, but more especially to the epidemic of 1856, which appeared in Minden and vicinity, amounting in all to fifty-six cases.

During the autumn of 1854, I was called fourteen miles from town to see a negro girl and a boy, respectively 8 and 2 years of age ; found them laboring under some difficulty of breathing, from tumefaction of the glands of the neck, with soreness of the throat when attempting to swallow ; also a harsh, rough and uneven skin, accompanied by a very frequent, quick pulse, and constipated bowels. These cases, as they presented themselves, I pronounced *Scarlet Fever*. The girl's case was of four days standing, that of the boy two days ; they presented no differences in character, except what would be expected from their relative stages. It was very evident that they had not been exposed to the contagion of the disease. It then must have arisen from some

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\* Dr. E. DOWLER : The Committee on Essays, read before *The Medical Association of North Louisiana*, respectfully submit the Essays of Drs. Harper and Lacy, which, if you consider worthy, may be inserted in your Journal.

Very respectfully, THOMAS J. ALLEN, Corresponding Secretary.  
February 23, 1857.



cause or causes, limited in extent, and beyond my appreciation, as this was the only place in the country where it appeared at that time ; fourteen other cases of the same disease soon followed, which established, beyond doubt, the correctness of my previous diagnosis. In the sixteen cases just enumerated, there were 9 of *Scarlatina simplex*, 6 mild cases of *Scarlatina anginosa*, and one of *Scarlatina anginosa* in its worst form. In the cases of *Scarlatina simplex* very little medication was necessary ; a saline cathartic and cooling draughts, with a due regard for diet, were amply sufficient. In those of intermediate grade, a purgative was rarely required ; if the throat was troublesome, a strong solution of the nitrate of silver, applied as often as necessary, was quite successful in circumscribing the inflammatory action, thus preventing extensive sloughing of the parts. I usually advised a gargle of flax seed immediately after the application of the nitrate of silver, as soothing to the diseased surface.

In the advanced stages of the disease, when the necessity for support to the failing powers was evident, or where convalescence had just commenced, and the vitality of the system was greatly exhausted, a nourishing diet was given, consisting of milk, chicken water, soft-boiled eggs, and occasionally brandy or port wine, with *cold water* to the head, if much cerebral disorder was present.

The treatment of the severe case of *Scarlatina anginosa* was very similar to that of the others. In this case I alternated the use of the nitrate of silver with that of sulphate of copper, and used *cold water* more freely to the head and throat. *Recovery*, in every instance, was the result.

Having witnessed the happy termination of all these cases, it was well calculated to impress me favorably with the *refrigerant* treatment. The recent epidemic has but convinced me of the correctness of this method.

In the month of May, 1856, there appeared in Minden an eruptive fever, which ultimately proved to be *Scarlatina* ; it continued, with an occasional remission, up to the latter part of August. During these three or four months I had charge of forty cases. The epidemic was not of a malignant type ; I, however, saw two cases of that form, the patients of other medical gentlemen, none of mine assuming so aggravated a character. Of these two cases, one died in twenty-four hours after my first visit ; the other in as many minutes. I know of nothing peculiar in this epidemic ; it seemed to follow one law at least, which is characteristic of them all ; that is, to flourish for awhile, seemingly die away, then spring up again with renewed vigor. In many cases the eruption was almost simultaneous with the invasion of the

fever. In some there was no eruption ; with this one exception, almost every other prominent symptom of Scarlatina was present ; that they were cases of *Scarlatina*, justly treated as such, the sequelæ have proven. In others again, the eruption was from twenty-four hours to the fourth day of the fever in showing itself. *Angina* was present more or less in every instance, but bore no proportional ratio to the profuseness of the *rash*. Frequently where the eruption was most perceptible, *Angina* was least troublesome, and *vice versa*. There were no periods, from the first febrile movement, at which the eruption could be looked for with certainty ; and I may add that, after its appearance, it was equally as indefinite as to the time of its duration. In a few cases it entirely disappeared in ten hours ; in others, it would disappear and return alternately for several successive days. Then there were other cases wherein the eruption continued unchanged until the third or fourth day, and, strange to say, there was a case in which the rash retained all its vigor up to the close of the fifth ; and there was another as late as the morning of the sixth day. In many cases prior to, or just after the eruption, there was a peculiarity of the tongue, so uniformly present, as almost to render it a pathognomonic symptom ; it is that condition of the tongue, which I expect the most of you have noticed ; it looks as if it was painted white, or coated with icing, with well-defined borders of red, and the general surface studded with innumerable red points. This appearance of the tongue passed away as the disease progressed, assuming a scarlet color.

The pulse is probably much more frequent in this affection, than in any other of the *Exanthematica*.

Of the 40 cases under my care during the epidemic, there were 19 of simplex, 12 of mild *anginosa*, and 9 aggravated cases of *anginosa*, some of which threatened to assume the malignant form. In some of the cases, seldom anything was employed beyond a saline laxative, repeated from time to time, as circumstances demanded. When the arterial excitement was very high, *cold water to the head and throat*, cooling drinks, and gargles of flax seed and vinegar, constituted the treatment in a majority of the simple cases ; in others, the chlorate of potash was added to the treatment, as recommended by Dr. Watson, with the happiest effect. The twelve mild cases of *anginosa* yielded pretty much to the same treatment as those of the simple form, the more lavish use of *cold water*, and the occasional application of nitrate of silver or sulphate of copper, with the probang, constituted the essential difference in the treatment of these two forms of *Scarlatina*. The troublesome itching of the skin, which is apt to supervene upon the appearance of the eruption, can be relieved to some extent by sponging

the surface with cold water, which does away with the intolerable heat ; brans of different kinds may be rubbed upon the body, and thrown into the bed of the patient, which soothes for a time.

The nine cases, alarming in their character, underwent in the early stages, to a certain extent, the same treatment as those of the mild form ; but as they advanced, the more threatening become the symptoms, such as great difficulty of breathing, from glandular enlargement, combined with a viscid and tenacious secretion, choking up the larynx ; a more frequent pulse ; extreme restlessness and jactation, doubtless arising from obstruction in the air passages, with some disposition to diarrhoea, and evident tendency to congestion of the brain ; in some, these symptoms were recognized at an early period, in others, were deferred until desquamation had commenced. The head and throat trouble was the distinguishing feature in these cases ; pulse ranged from 125 to 180, with more than usual heat about the head, attended at times also by slight incoherency, and nervous twitchings of the fingers and eyelids. There is but little doubt that in most of these cases, the excitement of the brain evidently arose from the condition of the throat ; those symptoms were, however, promptly met, not by sponging, but by *pouring cold water* out of a pitcher, or some other convenient vessel, upon the head, giving the water a fall of from 4 to 12 inches ; this was continued from 15 to 40 minutes at a time, or until the pulse was reduced 20 or 30 beats in a minute, and the head become cool. At this crisis, the patient would more frequently than otherwise go off in a refreshing sleep, lasting half an hour, more or less. Reaction manifested itself by the same restlessness, incoherency, and hurried respiration, but which would always give way to the impression of the water, thereby placing the patient in a condition highly favorable for recovery, other things being equal. In some of the cases *chlorine* was used as a stimulant and antiseptic with good effect.

There was a condition of the throat which gave rise to much trouble, even after desquamation had in some instances almost subsided, and the patient otherwise convalescing ; it was where the ulcer was so low as to be beyond the reach of the probang, and the little patient, not knowing the importance of raising the foul secretions, swallows them, whereby the system becomes thoroughly inoculated with the animal poison, generating that condition of system well known as typhoid, and in one instance producing, as I am well convinced, that characteristic feature of the diseased state of the glands of peyer, similar to that which accompanies genuine enteric fever, with a pulse from 125 to 180, a tympanitic abdomen, and considerable excitement about the



brain. Cases of this character were treated pretty much as those of enteric fever, at the stage where similar symptoms were present, with the addition of cauterising the ulcer of the throat, if accessible, which is most certainly the source of the mischief. A nourishing diet was given, also brandy or port wine, with a free use of chlorine, to rid as much as possible, the secretions of their obnoxious properties. When the respiration became embarrassed or hurried, from flatulency, *turpentine* was administered ; if any threatening of brain disease appeared, the patient was subjected to the cold water, and continued until such symptoms were allayed.

This condition of things lasted from six to ten days. The motions from the bowels consisted mostly of secretions from the throat, occasionally tinged with faecal matter ; but so long as the throat remained in an ulcerated state, diarrhoea was invariably present ; it could only be temporarily checked, as the source of the malady had to be reached before any permanent benefit could be realized, proving that the diseased throat and enteric symptoms bore the relation of cause and effect.

The sequelæ of "Scarlet Fever" are generally a source of much interest and uneasiness to the physician. Indeed, there is no one disease which presents a longer catalogue of secondary affections than *Scarlatina*. Of the various diseases which are likely to follow scarlet fever, *dropsy* in some form is, according to my observation, the most frequent. Of the various forms of dropsy, *anasarca* is probably the one generally met with ; it ordinarily makes its appearance from the last stages of desquamation to the third or fourth week following. Medical opinion is yet unsettled as to the form of *Scarlatina* most apt to be succeeded by dropsy. Of the fifty-six cases enumerated, there were eight cases of *anasarca*, all of which supervened upon mild cases of scarlet fever, not one severe case of *Scarlatina* resulting in dropsy of any kind. In the dropsies following this eruptive fever, there is an almost total inaction of the kidneys, an inertness which seldom attends the disease originating from a different cause ; it readily yielded to active hydrogogue cathartics and diuretics ; the one to produce copious watery evacuations from the bowels, while the other incites the kidneys to increased action. An exclusive milk diet should be rigidly adhered to throughout the complaint. When the lower extremities are swollen to any great extent, a bandage applied, beginning at the toes and terminating at the knee, or high up the thigh, if preferred, has been found highly useful in reducing the effusion. After the effusion has been in a great measure removed, if the patient is perceived to be in an anæmic condition, some one of the mineral acids, or ferruginous preparations, should be immediately resorted to. A varied and nutritious diet, in this state of system, is admissible.

It is stated that the dropsies which follow Scarlatina are sometimes dependent upon, or associated with, that peculiar urinæmic state known as "Bright's Disease;" if so, then a case thus dependent on, or associated with "Bright's Disease," would be found more difficult of cure than those which came under my notice.

Various speculations have been indulged in regard to the prophylactic virtues of *Atropa Belladonna* in Scarlatina. There are few who place implicit reliance in its preventive properties; others, again, firmly believe that it has the unmistakable power of *modifying*, if not preventing an attack; while others, whose statements are equally reliable, denounce its virtue in preventing or modifying the disease, and, in this respect, as worthy only of the source from which it emanated.

I gave belladonna, during the epidemic of 1856, to twenty children: 19 of them took it as directed, and one being irregularly. Of the 20 children, the one only who neglected to take the medicine as directed had the disease; most of the 19 who escaped, were not only exposed to the epidemic influence, but to direct contagion.

With this experience, I have ranked myself with that class of the profession who, without relying implicitly on the preventive powers of belladonna, yet deem it highly useful in modifying and arresting, to some extent, the dreadful ravages of Scarlatina.

ART. II.—*Phrenology and Physiology Compared.* By DERRY LACY, M. D., Shreveport, Louisiana.\*

THERE is an element of truth in every "ism," which serves as a basis or foundation upon which the most beautiful theories are built. All the ingenuity of visionary men is displayed in working out the unknown and mysterious problems of our being. The intimate connection of soul and body, and the admitted fact that the brain is the instrument of the mind, are the grounds upon which Phrenologists base their systems. The strange coupling of fact and fiction—the array of arguments and assumptions—are well calculated to perplex a student.

Every intelligent physiologist admits that the Cerebral Hemispheres are the only instruments the mind has for evolving thought—that through their operations every manifestation of intelligence is elicited. The shape of the head is dependent upon the previous training of the mind—even races of men, by a change in their habits and manners,

\* Read before the Medical Association of North Louisiana, and communicated by the Secretary to the New Orleans Medical and Surgical Journal.

undergo a like change in the conformation of their heads. It is an axiom in physiology that, in proportion as an organ performs, its normal function will it enlarge—its powers will be increased by use—the determination of blood to the part, to supply the waste which is incident to action, gives greater vitality and renewed vigor as a consequence.

With all due deference to the scientific men who have devoted their lives to this subject, we must say that they have forgotten to study anatomy, and have preferred the ideal field of fancy to the real and practical one of osteology. The most eminent physiologists of the present day do not pretend to disclose the secret workings of every portion of the brain ; neither do they isolate each organ and map off the brain, as if it were before their eyes. It is only by the study of comparative anatomy that we can approximate the truth ; by studying the whole series, beginning at the lowest, and tracing out the connection. We can, in this way, discover the uses of every additional ganglionic centre, by comparing the powers of the weaker with the stronger. Comparative anatomy thus furnishes “so many kinds of experiments ready prepared by nature.”

Every superimposed ganglion adds to the sensation and locomotion of an animal. When we reach man, in the ascending scale of animated beings, the same laws apply. We can refer any increase of intelligence to an increased size of the brain, the convolutions being deepened, and the surface for the reception of impressions being extended.

On account of the complexity and indivisibility of the brain, taken as a whole, physiologists recognize but two great divisions : 1st. “The Sensory Ganglia, including that assemblage of ganglionic masses lying along the base of the skull in man, and partly included in the Medulla Oblongata, in which the nerves of the special senses have their termination, also the Corpora Striata and Optic Thalami.” 2d. The Cerebral Hemispheres, which are superimposed upon the Sensory Ganglia—which obscure them by their great development in man—on this account, their importance is lost sight of by phrenologists.

The Sensory Ganglia are the centres of sensation. The Hemispheres are the surface upon which impressions are made through the Sensorium which is the only channel of communication with the external world. I will not trespass on your time by going fully into this portion of the subject, which is familiar to all.

The intimate connection of soul and body, of mind and matter, render this subject extremely difficult. We do not pretend to solve the mystery. It is known only to the Creator. Neither would we discard what is known to all observers. The general contour of the head—the cast of



feature—the peculiar expression of the eye—distinguish the wise man from the fool, the honest man from the knave, the refined from the vulgar. It is this element of truth that I mentioned at the outset, which has misled many. We can go so far as to pronounce, with certainty, that the intellectual predominates over the physical in a given case.

I shall descend from platitudes and generalities, and confine myself to particulars.

All the great men whose heads have been examined, go very far to prove that size is important, yet we know that it is not the measure of intelligence; activity and vitality being more important. For the sake of argument, we will admit that the size of the brain is the only criterion or proof of mental capacity. How shall we prove this on a living subject? I take the position that the size of the cranium does not disclose the amount of brain, much less that of the mind of the person. There are thick-skulls as well as numb-skulls; there are hard-shells as well as soft-shells.

To drop metaphor, the inner and outer plates are separated by a diploe, a honeycomb structure of no determinate thickness. It is sometimes nearly half an inch thick, and again it is scarcely perceptible. The depressions and elevations on the outer plate do not correspond with those of the inner, or rather they are not the reverse of them, which should be the case to establish even this point. This position cannot be proven, unless I could bring before you craniums collected without design. By comparing their shape and capacity with the evidences of mind which the person gave while living, we could come to some definite conclusion. We must divest our minds of prejudice and all preconceived opinions, taking nothing for granted until it is proved.

I shall give my reasons for discarding this doctrine, drawn from analogy. Although they do not destroy, yet they weaken the phrenological argument. The osseous framework is symmetrical. If the muscular development is great, the points of attachment must be prominent. If the bones of the body are large, will not the head be proportionally large also? Will not the analogy hold good throughout the whole mechanism? The muscles of mastication will compare with those of locomotion. There must be a unity of design. If the muscles of the neck are large, and the vertebral column be large to which they are attached below, will not the protuberances and processes of the head be equally developed? Is not the power of the sterno-cleido-mastoid muscle dependent upon the width of the processes, and the firmness of their attachment?

Perhaps I have gone too far into the subject of muscular develop-

ment for my own safety. The temporal muscle is the organ of music, if we are to believe ignorant manipulators, who pass their fingers over it "*secundum artem*." Our animal passions depend very much upon the development of the Splenius Capitis. Even the olfactory apparatus must give way, and permit memory to occupy the frontal sinuses.

To carry out this analogy still further, I will add that every man who has given proof of decided ability, has almost as much brain behind his ears as before them; the mental and physical powers must be equally balanced. You might, with as much reason, expect complicated machinery to work well without a sufficient motive power, as that a great mind could be put in action by an enfeebled body. As the action of the mind and body are reciprocal, I will change the comparison and say, that a powerful engine, driving weak machinery, performs fully as well as a strong mind in a frail body. We cannot pronounce a mind strong, unless it gives its own evidence, as we could in the case of the engine, the connection in the former being so intimate that we cannot separate them. Thrice happy the man of whom it can be said, "*sano mens in sano corpore*." Vigor of mind and elasticity of spirits, depend very much on the condition of the general system. Tonicity of muscle and of thought are almost inseparable. Precocious children never become great men; there are in them absent that maturity of thought, strength of will and accuracy, which distinguish those who are more backward. The physical and mental powers must develop "*pari passu*," and not as Virgil describes Ascanius, with "*non possibus æquis*."

It is a well established fact, that the cineritious matter of the brain, 3-16 of an inch thick, which overlies the white portion, receives all the impressions which are conveyed to it from the sensorium through the diverging fibres. It also gives expression (so to speak) to these impressions through the converging fibres. These bands of white fibres form the commissures of the brain. This cineritious matter dips down into the convolutions, and presents a large surface, upon which impressions may be made.

The intelligence of an animal is known by the depth of the convolutions. In man, also, it is the measure of his intellectual and moral powers. The extent of surface, then, is the only standard. In proportion as the convolutions deepen, will not there be a *regular expansion of whole mass*? Do we find those knots and depressions on the brain that we see on the surface? Every unprejudiced observer will admit that he does not. The outer plate has a double office to perform—to enclose and protect the brain, and also to afford points for attachment of muscles; its shape may vary from the inner plate, to give additional strength and

security. Perhaps beauty may have her claim, if we were permitted to examine the heads and brains of very pretty, but silly women. There are caskets without jewels. I might add, there are heads without brains. Humanity does sometimes present the sad spectacle of matter without mind.

Thus far I have proceeded in a disjointed and desultory manner. I shall discuss the functions of the cerebellum, and drive them from their strongest position. You will pardon me when I frankly confess that some of the facts to be presented, and the arguments adduced in demonstrating the functions of the cerebellum, are taken from Carpenter's Principles of Human Physiology, to which I refer you for a more full explanation of its functions. That most distinguished compiler admits more than I have done, thus contradicting himself.

I have not presented an array of names, but have preferred stating isolated facts, and going on with my subject. I could have copied them from standard works, and appeared much more learned. It is only when speaking of the cerebellum that I have referred to authorities. The rest is written without chart or compass, relying upon general principles and common sense. There are vulnerable points which I hope my brethren will not overlook. Truth must triumph at the expense of ignorance. I am willing to suffer, if by that means new light can be thrown on this subject. The weight of proof rests with those who advocate this doctrine. If my arguments are rather negative than positive, I am satisfied. We give our reasons for denying positions, or rather assumptions. Let their advocates remove these objections, and we will retract all that we have said.

We come to the cerebellum in the examination of this subject. It is the corner-stone of the whole edifice. If they fail to establish the fact that it is the organ of the sexual instincts, the whole fabric must fall. They are willing to make that the test, which if true, would prove nothing else. I assert, without hesitation, (in the language of my esteemed preceptor, Dr. Cabell, of the University of Virginia,) that the cerebellum has for its office to coördinate the combined muscular actions necessary for executing locomotion.\*

The phrenological doctrine can be refuted. 1st. By studying the comparative development of the organ in the different vertebrate classes. Those classes which have the greatest variety and number of separate muscular actions, have the largest cerebellums. This increased development is independent of their sexual desires and habits. This fact is clearly demonstrated in fishes which do, and those which do not, copulate. There is no corresponding difference in the size of their cerebellums, that being due entirely to the variety and complexity of their



movements. The comparison may be traced out through all the vertebrate classes. The same conclusion will be arrived at. Reptiles are the most inert, therefore they have the smallest cerebellums, yet their sexual instincts are strong. The cerebellum increases rapidly, in proportion as an animal becomes capable of maintaining the erect posture, in which there is a complex combination of muscular exertion constant, yet apparently involuntary, that of the bear being greater than that of the dog. In comparing the Gallinaceous and the Raptorial tribes of birds, the former, instead of having a larger cerebellum, have one of inferior size. Who would compare the gallantry of the buzzard with that of the cock? Kangaroos and monkeys are the most salacious of animals, yet their cerebellums are very small. I have no doubt every one present will agree with me in pronouncing the monkey to be indecent and disgusting in his desires. They have great control over their movements, which might suggest a doubt as to the truth of my position; their want of muscular development removes that doubt. Phrenologists contend that the *constant desire* in man accounts for the size of the organ, the desire being only occasional in animals. Cats, rabbits, and many other animals, breed throughout the year.

2d. This phrenological dogma is refuted by the effects resulting from the removal of one or both lobes of the organ. We can in this way decide with certainty what amount of injury has been sustained by the nervous system, and, by comparing a large number of cases, we can discover the invariable effect produced. We must make due allowance for the shock which such a serious injury would produce. "The cerebellum can be removed, without destroying the actions immediately essential to life." The power of coördinating the muscular movements is lost; the animal is unable to spring, fly, walk, or stand, or preserve its equilibrium. The removal of one lobe affects the movements of the opposite side of the body. If the mutilation is partial, the organ will gradually recover its functions.

3d. Effects of Disease. Inflammation of the membranes does not produce delirium; even softening of the organ does not destroy intelligence, which proves that it is not the instrument of the mind. Acute disease is generally attended with symptoms of apoplexy, and reveals nothing as to the character of the special functions of the cerebellum. Chronic disease is rare, yet, in the few cases recorded, "*unsteadiness of gait, without paralysis*," was a striking symptom, thus confirming the conclusion derived from comparative anatomy and experiments, "that the cerebellum has for its office to coördinate the combined muscular actions necessary for executing locomotion."

The most accurate observers have failed to discover any coincidence

between the diseased states of the cerebellum and functional disorders of the genital organs. Out of 178 cases collected by Burdach, only 10, or little more than 1 in 18, presented such coincidence ; even this might be accounted for by the intimate connection that exists between every portion of the nervous system. The lumbar plexus and the lumbar ganglia of the sympathetic being involved, the whole machinery is thrown out of gear, and a general derangement ensues. Cruveilhier mentions the case of a girl in whom the sexual propensity was strongly manifested, amounting to Nymphomania, and yet the *cerebellum was entirely wanting*.

I have refuted this doctrine by facts adduced from comparative anatomy—from experiments—and also from the effects of disease. I have tried to classify my facts in such a way that I might go on with my subject, and not fly from point to point. This theory being based upon so many groundless hypotheses, will not admit of such treatment. Gall and his followers maintain that the cerebellum is the exclusive seat of the sexual instincts, and that this is the function of the organ. They assert, with unblushing effrontery, that they can judge of the intensity of the animal passions by the prominence of the occiput. It is not my intention, gentlemen, to bring forward my personal experience, or appeal to yours ; my native modesty, and my respect for you, forbid it ; yet it is an admitted fact that the sexual propensity is very closely connected with the emotional states of the mind. The imagination can become inflamed by lascivious pictures, the creations of its own deranged action. The love of offspring, and in man as well as animals, combativeness, is brought into play. “Out of their own mouths will I condemn them.” If we are to believe them, these faculties of the mind have a local habitation and a name ; they are organs, and are located in the cerebrum. The will, the great balance-wheel of the mind, is in abeyance, reason is dethroned, and imagination runs riot. This is the reason that the sexual instinct is stronger in man than in animals. The one is influenced by the emotional and ideal creations of his mind ; the other, by external impressions alone, which act with equal force on some men. I blush to make the humiliating confession that there are men so brutal—so sensual—that every faculty of a superior mind is directed to the gratification of this enslaving appetite.

It is asserted that castration produces an atrophy or arrest of development of the cerebellum. This has been disproved by the experiments of Leuret and Lassaigne, who found the average weight in 21 geldings was 70, that of the same organ in 10 stallions being 61—the superiority of the former being due to their employment for draught, the latter being kept to propagate the species—thus showing that the exercise of

the muscular apparatus increases its development more than the exclusive exercise of the genital organs.

The prominence of the occiput is affected by the modes of life that different races adopt. "The prognathous Africans have the most prominent. The pyramidal skulled Asiatic the least, the elliptical European being intermediate. It is established, by anatomical evidence, that the size of the cerebellum in the different races bears no relation whatever to the degree of projection of the occiput. The plane of the organ being somewhat oblique, the elliptical skull is horizontal in the prognathous, and nearly vertical in the pyramidal. This does not affect the size or anatomical relations of the organ." This position of the cerebellum agrees with that of the entire brain, whose inclination or dip from the axis of the spinal cord depends upon the shape of the head. Every part of the brain may be perfect in each class, yet the inclination may be different.

The base of the brain presents a large surface which cannot be felt. Phrenologists give no account of this portion, although it embraces at least one-third of the superficies. This is a very important point in the investigation, and should not be lost sight of, but should be explained. Every faculty of the mind is mapped out on the surface, which they can approach. The base of the brain, with all its depressions, elevations and convolutions, is ignored. The problem they present for our solution embraces as many unknown numbers as there are faculties, with nothing definite by which we can find out one of them; even if we should be so fortunate, the remainder would be unknown.

I cannot resist the temptation of taking a few extracts from the *Noctes Ambrosianæ*; they prove nothing, yet they ridicule phrenology most successfully:

"Hogg—The Turnip Doctor?

"Dr. Mullion—You haven't heard of it, then? I thought all the world had. You must know, however, that a certain ingenious person of this town, lately met with a turnip of more than common foyness in his field; he made a cast of it, clapped it to the cast of somebody's face, and sent the composition to the Phrenologists, with his compliments, as a *fac simile* of the head of a celebrated Swede, by name Professor Tomhippison. They bit; a committee was appointed; a report was drawn up; and the whole character of the Professor was soon made out as completely *secundem artem*, as Haggart's had been under the same happy auspices a little before. In a word, they found out that the illustrious Mr. Tomhippison had been distinguished for inhabitiveness, constructiveness, philoprogenitiveness, etc.: nay, even 'tune,' 'ideality,' and 'veneration.'"



I hope the strong-minded women of my acquaintance may never read the following ; they will never forgive me, and will always hold the memory of the Ettrick Shepherd in contempt :

" *Mrs. Gentle*—Phrenology is quite epidemic, Mr. Hogg, among our sex in Edinburgh.

" *Shepherd*—Hae na ye observed that 'a leddies that are Phrenologists are very impident, upsettin' ; bauld among men, loud talkers, and lang as weel's loud ; tak desperate strides when they walk ; write a strang haun' o' write ; grow red in the face gin you happen to contradict them ; dinna behave ower reverently to their parents, nor yet to their husbands, gin they hae the good luck to have gotten wed ; hae nae slicht o' haun' in curlin their hair toshly, and are naewise kenspeckle for white teeth, to say naething about the girth o' their ankles."

Electro-Biology has been brought into requisition, with its kindred spirits, Mesmerism and Table Rappings. The time and space devoted to one lecture will not permit me to go fully into this subject, which involves many questions of a mental, moral, and physical nature. No one will deny the peculiar and mysterious influence of Mesmerism, which brings the mind of the subject entirely under the control of the operator. The will is in abeyance and the mind is at rest, but ready, when aroused, to follow any suggestion made to it. "The directing power of the will is lost, the mind being still open to the reception of external impressions."

The person is generally informed as to the locality of each (so called) organ ; if not, its assumed function is suggested to him while in the mesmeric state. He acts upon the impressions made upon his excited and susceptible mind, and gives expression to any sentiment that the operator may desire. I know there is danger of raising a storm about my ears. Mankind are very superstitious on these subjects, and suppose that one person can read the thoughts of another without some outward manifestation, which is simply ridiculous, unless we grant to man the power of God. Man cannot derive knowledge of other men, nor of the world, except through the external senses. I attach no importance to the fact that persons in this condition are affected differently when the different organs, or rather portions of the head, are touched, but attribute it merely to previous education, or to the suggestions of the operator at the time.

The Facial Angle does not prove the truth of Phrenology, but only the general principle acknowledged by all, that the anterior lobes of the brain are the instruments of thought.

A line drawn from the side of the chin to the most prominent part of the forehead, will form an angle with a horizontal line drawn back-

wards from the anterior margin of the nares to the external auditory foramen. This angle will indicate the development of the brain, as compared with that of the organs of sense. It has become the test of intelligence in the different races of men, and also in animals. It is greatest in man, who occupies a more elevated position in the scale of intelligence. Standing alone, as he does, far above all the other created beings, bearing the impress of his Creator on his lofty brow, and in his erect carriage—disconnected from the great chain which, link by link, binds the lowest and the highest in the indissoluble bonds of unity—with aspirations rising above the objects of time and sense—he looks forward with anxious solicitude into the unknown and illimitable future.

ART. III.—*Post-mortem Examinations in the Yellow Fever of Natchez.*

By SAMUEL A. CARTWRIGHT, M. D. (*Continued from page 660.*)

Case 10th. October 1st, 1823. Mr. Claibourne Young, a middle-aged man, was brought into the hospital, with hæmorrhage from the mouth and nose, and died in a few hours. The history of his case I could not satisfactorily obtain, but understood he had been sick about two weeks.

The omentum majus was inflamed slightly, so was the omentum minus. The case did not show marks of inflammation, unless in its mucous membrane, which was inflamed in patches. The membranes surrounding the duodenum were highly inflamed, viz., the mesocolon and cellular substance. The duodenum was highly inflamed and of a black color in many parts. The tendinous origins of the diaphragm and the ligamentum arcuatum, that lies below the kidneys, imbedded in cellular substance, were much inflamed. So was this cellular substance, and the cellular substance surrounding the kidneys. The membranes covering the posterior surface of the liver, and the great vessels of the abdomen were highly inflamed. Some darkish matter was contained in the stomach and duodenum. The membranes about the pancreas were much inflamed; spleen looked natural. The gall bladder was filled with black bile. The liver was of a more healthy color than in the preceding cases, yet engorged with blood. It, however, appeared hardened or scirrhus on its anterior portion, which must have been occasioned by previous disease. The lungs were much engorged with blood or a frothy mucus. The heart looked healthy, and the right ventricle pretty much distended, which I expected was produced by its being filled with blood, but was much surprised, on cutting into it, to find no blood in it, but filled with the same kind of substances as in case the 9th. One very

large oyster-like substance (though yellow) extended from the ventricle into the auricle under the valvulae tricuspidales. The left ventricle had them also, entangling the mitral valves. These substances appeared to have little peduncles that were based among the decussation of the muscular fibres of the heart in the ventricles, and the muscoli pectinati in the auricles. I could not ascertain whether there was an adhesion of them by vessels or not.

Dr. Gustin was present.

Case 11th. October 1st. Joseph Johnson, who, I was informed, got his sickness in the country,  $2\frac{1}{2}$  miles south of Natchez, came a day ago to town, and entered last night. I could not find out how long he had been sick—not long, I presume, for he was a large, stout man, and was but little reduced in flesh. He had black vomit when I saw him; pulse about 57, and so strong, I had a great notion to have bled him.

He died early this morning, and was examined in a few hours afterwards.

The morbid appearances were pretty much the same as in the preceding case. The mucous membrane of the stomach was somewhat inflamed; the duodenum was inflamed very much, and mortified even; the unmortified portions of this bowel were very tender and easily torn; the mesocolon highly inflamed. The liver appeared not much diseased, and had not that greenish color spoken of in the preceding cases. The gall bladder was filled with green and not a black bile as in the others. The membranes surrounding the kidneys, the great blood vessels and posterior surface of the liver were much inflamed. The spleen not much diseased. The cellular substance covering the iliacus internus muscle was inflamed. The simular ganglion and solar plexus, lying about the root of the coeliac artery, in the very nest of the inflammation, were taken out and examined. The membranes investing these ganglions and plexuses were very highly inflamed—I allude to the immediate covering, as well as to the cellular substance adjacent. The investiture of these nerves were even in many places black. However, membranes in many other parts, had the same appearance. The jejunum showed some little marks of inflammation, and was filled full of the black vomit, which neither the stomach nor duodenum contained. The last had in it a pus-like secretion.

On cutting into the lungs, they were found much engorged with blood and a frothy matter. On opening the heart, the same oyster-like substances were found in the ventricles as in the former cases, but the number was fewer and the size less than in the two preceding cases. The little peduncles of these substances appeared to shoot out from among the fibres of the heart. Their form and texture were much the same as in the preceding cases.



Case 12th. October 4th. Mr. McIntyre, brought in the hospital and died last night; was examined this morning from head to foot. Had been sick some time; said three months. He evidently, however, had yellow fever. He had not the black vomit, but the yellow skin; was slightly delirious.

There were no substances or hydatids in his heart. His lungs looked much more healthy than the three former cases. The mucous membrane of the stomach slightly diseased, but no other membrane. The duodenum was inflamed, black and rotten; the mesocolon and membranes about the back of the liver and its vessels, and the kidneys were highly inflamed, so was the lesser muscle of the diaphragm. So the membrane covering the iliacus internus muscle. In this case the large bowels were very much distended, and the rectum filled with black vomit; bladder much distended. The brain showed but very slight marks of inflammation, yet the pia mater was inflamed; the dura mater did not appear diseased. The ganglionic nerves were examined, and the membrane investing them found to be much inflamed. Between the roots of the celiac and superior mesenteric arteries, where lies the celiac plexus, was much inflammation. The membranes investing the meshes of this plexus and the branches coming to it from the semilunar ganglions of the splanchnic nerve, were highly inflamed; so were the membranes investing the several nerves.

The spinal marrow was then examined from atlas to coccyx. Little or no disease was seen in the cervical or dorsal portion, but the lumbar and sacral portion showed slight marks of inflammation in the membrane that invests the little medullary chords that compose the medulla spinalis. The great sheath of the spinal marrow showed little or no marks of disease. In this very sheath-membrane that invests the nervous chords, inflammation was evident, or at least engorgement, its vessels being injected with red blood.

This man had lues venerea, also.

Case 13th. Mr. Puckett was brought into the hospital on the third day of his disease, Yellow Fever, with bleeding from the nares. Complained of much headache and pain in his back, with red, muddy-looking eyes; aged about 35; had gonorrhœa very bad.

October 3d. Bled freely; emetic; much bile was evacuated, and he got better, the hæmorrhage from the nose stopping. A purge was given which operated well.

October 4th. Mild purge every six hours; very thin watery stools, which weakened him very much.

October 5th. Emetic, and then a purge; effervescent mixture. He died at 9 o'clock, P. M., with black vomit.

On opening him, the stomach was not diseased, but contained blackish matter. The duodenum was inflamed and mortified in three places; the mesocolon, the membranes on the posterior surface of the liver, and round the great vessels were much inflamed; so the cellular substance about the kidneys, and the membranes about the root of the cœliac artery.

The heart was not diseased; the lungs, liver and spleen engorged with blood. The gall-bladder of a black color and filled with black bile.

Case 14th. Daniel Rook, brought in on the twelfth day of his disease, an intermittent fever of the malignant kind. He took an emetic on the next day after he came in. Shortly after he arrived, he was taken so ill, that he could not take the emetic which was prescribed, being senseless and speechless, and lying motionless. The next day he got so that he could swallow, and took his emetic, and then a purge succeeded it. He then relapsed into his former state of insensibility, and died. The next day, the 9th October, a few hours afterwards, was examined; lungs inflamed. His heart was filled with those oyster-like hydatids formerly mentioned, the tails of which extended into the arteries. The right auricle was filled with a very large one, and this auricle was somewhat inflamed. There was no particular perceptible inflammation in any of the viscera, save a little at the root of the cœliac artery. The spleen was much enlarged and remarkable soft, so much so, that it fell to pieces like coagulated blood on being handled. The liver looked natural. The stomach and bowels, particularly the duodenum, were so tender, that they tore as easily as brown paper, and scarcely would bear their own weight when raised up.

Case 15th. Thomas Place Landen, brought in on the seventh day of his disease, and died on the ninth; took purgatives of cal. and oil and the effervescent mixture. He complained of nothing; was unable to help himself; had frequent muscular twitchings and trembling of the jaws. Died 9th October.

In his heart was found a small oyster-like substance, but none but one that I could discover. Lungs engorged and inflamed; liver no unusual appearance; gall-bladder full of black matter. Stomach not diseased; but all the bowels, from the pylorus down, showed marks of inflammation. The ileum was intussuscepted in several places, and more inflamed, and of a darker color than any of the others. The colon was enormously distended with wind. The membranes between the cœliac and mesenteric arteries were very highly inflamed. So were the membranes about the kidneys. He had gonorrhœa very bad.

Case 16th. October 15th. Amos Runnels, aged 31, from Ten

nessee formerly, was attacked with yellow fever after having had the lues venerea for two months. He was treated on the mercurial plan of small doses of calomel frequently repeated during the first five or six days.

On the 8th of October he was admitted into the hospital, on the eighth day of his disease, with vomiting. I was told that black specks were discernible in it. He complained of little or no pain; had never been bled, but told me on his first attack that he had much pain in the head and back and calves of the legs, which all subsided, leaving an anxiety and restlessness; red, muddy-looking eyes and yellow skin. He seemed very rational on every subject whatever, save it be an idea that the steward of the hospital wanted to poison him, and would take no medicine from him. On the 9th, I prevailed on him to take some calomel, (the only medicine that we had any hope of being kept on his stomach;) it brought away several very black foetid dejections. But we could get him to take no more, owing to the erroneous idea he had formed that the attendants wished to poison him. This hallucination was somewhat similar to that of a man by the name of Murry, who died, and who complained of no pain, and neither his pulse, tongue, nor looks, words nor actions indicated danger, whose medicines operated, and whose strength was not much diminished thereby. A few days before he died, I asked him if he had taken the medicine prescribed; he put out his hand and pointed to the chair, and told me they had put the medicine on the round of the chair and it all got spilt. The steward told me he had taken it; but whenever he was asked a question about medicine, he would point to the chair, and say that it was spilt. Yet on all other subjects he possessed his mental faculties entire.

On the 10th Mr. R. took no medicine; stomach very irritable; had several small, black dejections. Even before this time his body had a very disagreeable, foetid odor, which I have frequently before detected in persons having other diseases, and which I have always found to be a fatal symptom. The odor is *sui generis*; I know of nothing to compare it to.

On the 12th his pulse, which had never been above 60 since his admission into the hospital, now fell to 40 in the minute. His skin, which had not been above the common temperature since his admission, now fell somewhat below it. His urine, which he never had evacuated very freely, was now evacuated in very small quantities at long intervals, and of a deep yellow reddish color. This day also came on all the horrible symptoms of Yellow Fever. Bleeding from the mouth and gums, and now of a black grumous blood, that would not coagulate; vomiting of black matter, like coffee grounds; hiccough.



13th. Puking ; bleeding, and hiccough.

14th. Same as yesterday ; still keeps his senses, but will take no medicine.

15th. Laborious breathing ; became insensible ; died at 3 o'clock, P. M.

I proceeded, in 30 minutes after his decease, to make my examinations, in presence of Drs. Gustin and Denny.

On sawing through the cranium on a level with the upper part of the ears, at least 6 oz. of yellow serum run out before the cranium was bursted up from the dura mater ; when raised, I perceived that the serum came through a rupture that the saw had made in the dura mater, and that much more serum was yet remaining between the dura mater and brain. The dura mater itself exhibited marks of inflammation. The pia mater throughout the tunica arachnoides and plexus choroides were all highly inflamed.

The heart exhibited no marks of disease, only being filled with dissolved blood. The lungs appeared sound. The congestion of blood and frothy mucus, so common in the generality of cases, were not manifest in the present case.

The spleen was very small, hard and firm. The stomach was filled with black vomit. I slit it open, washed off the black matter by dipping it in water ; a slimy mucus adhered to its mucous coat, which was rubbed off. I held it up, and asked the physicians present if that stomach was diseased ? They examined it, and pronounced it free from disease. Neither its peritoneal, muscular, nor mucous coats were inflamed. The omentum minus and majus were both, however, much inflamed. The duodenum was inflamed in all its coats. It had in it black vomit ; the rugæ were imbedded in a slimy mucus, which seemed purulent, similar to that in the stomach, yet more abundant. The jejunum, ileum and colon, were engorged with blood, but not inflamed. To cut a piece off, and wash it in water, the redness would vanish ; this I call engorgement ; but when the scarlet color still continues, although worked and rubbed, I call it inflammation. The rectum was much distended and highly inflamed. Query, may not the singular smell, spoken of above, be owing to this cause ? The mesentery was engorged, and even inflamed in some places. The liver was engorged, of a greenish hue, but not inflamed, except the membranes on its posterior surface. The gall-bladder of its natural appearance, though filled with black bile. The membrane investing the kidneys were highly inflamed, particularly about the pelvis of the kidneys. The mesocolon that ties down the duodenum was highly inflamed ; also its layers that include the pancreas. On taking out the whole of the abdominal

viscera, more horrible marks of disease were to be seen than any hitherto described in this case. The diaphragm throughout its substance was awfully inflamed, which inflammation increased in equal ratio as we traced it to its tendinous origins from the lumbar vertebræ. The psoas muscles rotten with inflammation. The iliacus internus, which spreads over the cup of the ilium, remarkably inflamed. The membranes about the root of the celiac artery horribly inflamed. The ganglions of a yellowish color. The membranes about all the nervous ganglions highly inflamed. In a word, all the membranes covering the lumbar and sacral vertebræ much inflamed, but more so at the place of the ganglions. The membranes investing the great sciatic nerves much inflamed. These nerves were of a yellowish color.

Case 17. Mr. Langlay, aged 30, a Kentuckian; lues venerea of three months standing; came in the hospital on the 21st October; took a dose of calomel and jalap, and was directed to rub on his skin ʒi. of mercurial ointment, night and morning.

22d. Ointment continued, and was directed to take one or two calomel pills daily; took one of 5 grs. only.

23d. Gums looked swelled; ointment continued.

24th. I was much surprised, on visiting him to-day, to find him delirious, and almost in *articulo mortis*, having left him so well the day preceding. I was informed that in the evening of that day he was suddenly taken delirious, produced by an attack of Yellow Fever. Ordered calomel and oil, or senna, every four hours; injections of warm water every two or three hours, and a blistering plaster to be applied over his head. His medicine operated at 9 o'clock at night; stools came away involuntarily, and of a very foetid, black character; they were discharged in the bed, and he had besmeared himself all over in his excrementitious filth by the next morning.

25th. Continued the medicine, what we could get down him, as he was totally insensible, and often deprived of the power of deglutition; took some P. D., which operated tolerable freely; stools involuntary.

26th. Still continues comatose; medicine operates partially; calomel and senna; stools black, yet involuntary.

27th. Medicine cannot be taken.

28th. Took P. D.; calomel ordered, but could not take it.

28th. Got a little toddy down him.

29th. Died on the 7th day of his attack, having never spoken from the time he was taken.

He was quite limber when I went to dissect his body, so much so that I examined him carefully, to see whether he was actually dead.

The pia mater was found inflamed throughout, but less so than I

expected to find it ; on raising up the cerebellum, a considerable quantity of a serous fluid flowed from the spinal marrow below ; it seemed as if it was external to the sheath.

The heart was warm ; had a good deal of blood in it, and those oyster-like looking substances, yet much smaller than in any heretofore ; they were two or three inches long, and not thicker than a quill in the ventricles and auricles. The lungs were very turgid of blood. (I had noticed that he breathed very singularly a few days before he died, seeming to breathe with one side of his lungs, and then the other.) At the place where the bronchia divides, were terrible signs of inflammation. The diaphragm, in its lower part, was diseased all down the descending aorta, until it divides and forms the iliaes ; was much inflamed about the root of the coeliac ; the membranes were black with inflammation ; the whole bed of ganglions and nervous plexus were enveloped with membranes black with inflammation. The omentum majus was diseased. The liver was black throughout ; the spleen of its usual size, but very soft. The stomach looked healthy, at least showed no signs of inflammation ; the duodenum was inflamed throughout, so was the membrane enclosing the pancreas ; the duodenum mortified in one place ; the membranes investing the kidneys were inflamed. The colon was enormously distended with flatus ; the bladder moderately so with urine.

Case 18th. Robert Bell, came into the hospital on the 20th Oct., with intermittent fever, and took a dose of calomel and rhubarb, 10 and 20 grs.

October 21st. Took an emetic, and after it had operated took 10 grs. calomel and some oil.

October 22d. Missed his chill and fever ; much better and is now walking about ; takes bark and cream tartar, a teaspoonful of each every three hours.

October 23d. Is now apparently well.

October 24th. His tongue furs, yet is walking about ; ordered a dose of calomel and senna.

October 25th. Tongue looks worse in the evening ; took oil.

October 26th. Much worse, yet he does not complain ; skin feels dry and hot ; pulse quick, about 85. Tongue indicates mischief ; his oil yesterday had only brought away water ; gave him an emetic ; it did not operate so well as I would have wished ; little bile came away. Took afterward some calomel and jalap, 15, 25 ; watery stools still.

October 27th. Found him shoemaking. I did not like his looks, and directed him to take one spoonful of castor oil every five or six hours to keep his bowels regular.



October 28th. Found him delirious, or rather foolish ; starts up, grins, looks amazed ; his oil yesterday brought away only water ; does not urinate ; he answers questions readily ; ordered 5 grs. calomel repeated, so as gently to stimulate the bowels ; repeat every four or five hours ; took three doses ; also senna and oil ; does not operate ; urinates in the evening, thick, looks like water in which meat had been washed.

October 29th. Too far gone to take anything. Died at 8 o'clock, P. M.

October 30th. Proceeded to examine the body. This man who never complained of the least pain scarcely, was a mass of disease. The pia mater in all its convolutions, in the cerebrum and cerebellum was inflamed. The heart was free from those substances I have seen in others ; in the right ventricle there was a black spot about the size of a dime. His skin was yellow.

The lungs were diseased, abounding with a frothy substance. They were engorged with blood. About the division of the bronchial vessels, the membranes were black from inflammation, which inflammation of the membranes extended from the curve of the aorta to its division into the iliacs. Where the coeliac is given off the membranes were black. The nerves were yellow and the whole plexus was embraced by membranes violently inflamed. The liver was of its natural size ; so was the spleen, but the color of the first was a morbid green ; the spleen was very soft. There was not a thimble-full of bile in the gall-bladder. About the cardiac orifice of the stomach there was inflammation externally ; the omentum minus was inflamed, so was the omentum majus ; the stomach was much distended with flatus. On opening it I found its mucous coat inflamed in patches, and lined with a mucus-like purulent matter. It had black vomit in it. The duodenum was inflamed, and about five inches from the pylorus was mortified the size of half a crown. It was intimately adhered to the pancreas. The laminae of the mesocolon that enclose the pancreas were inflamed. The diaphragm was inflamed. The mesentery, jejunum and ileum were much engorged with blood, and inflamed in many places ; the colon was inflamed, and black as soot from one end to the other, some places extended with flatus, others not. (In case the 17th, the colon was much distended with flatus, about its course, the other half contracted.) The membranes about the kidneys were much inflamed. The kidneys themselves were preternaturally small, and the cortical part of at least one-third of each kidney was mortified, and black as soot ; a dark, molasses-like blood was squeezed out of each kidney. The bladder was very much distended with urine.

Case 20th. November, 1824. Mr. James Fothergill, aged 26, a native of London, a man low in stature, but well set and muscular, and rather fat ; had resided in New Orleans for more than a month during the prevalence of a malignant epidemic yellow fever ; but becoming afraid, he at length fled from the city. He came first to Woodville, and remained three or four weeks. He next came to Natchez, nearly two months after leaving New Orleans. He was attacked with a pain in his bowels after having complained considerably of being unwell without any definite ailment. The weather, for the week previous to his being attacked with pain, had been very cold for the season, so cold as to freeze water, but turned raw and rainy. Believing that he had colic, he took a dose of castor oil, but puked it up shortly. Vomiting would take place on his taking anything on his stomach ; his bowels constipated ; he took several doses of oil, salts, etc., without effect. On the third day of his being attacked with pain, he sent for me.

He was sitting before the fire, and politely got up and offered me his chair. I told him to sit down ; he did so. I felt of his pulse, which was rather slower than natural, but nothing else remarkable about it ; his skin was cooler than natural, which I attributed to the cold atmosphere. His tongue was a little white, but nothing about it indicative of serious disease. He complained of a severe pain about the navel, and had occasional vomiting ; believing it to be bilious colic, I took away about a pint and a half of blood, and directed him to take of calomel  $\mathfrak{z}\text{i}$ , and repeat it in three hours if it did not operate, and to drink freely of senna tea in the interim and afterwards. He took the medicine ; at night I saw him ; had not operated. I took away a pound and a half of blood ; his pain was not relieved. I directed the warm bath and injections, senna and salts, and the abdomen to be blistered. Next day called to see him ; told me his medicine had operated five or six times ; stools dark ; that he had taken off the blister before it had drawn, as it hurt him by its smarting ; said his pain was much relieved ; is now walking about the house. His countenance looks bad ; his skin has a motley, yellow, dusky, dingy look. An attendant observed to him in a joke, that he breathed like the ticking of an old watch, and looked like a man frightened out of his wits. I directed oil, and the re-application of the blister. He had red eyes.

In twelve hours news came to me that he was dead.

I proceeded to examine his body in company with Dr. McPheeters, two hours after death : not knowing that he had been in New Orleans, but believing he died with bilious colic.

The colon, on opening the abdomen, showed no signs of disease ; on opening it, it was inflamed, its mucous coat lined with a sanguineo-muco-

purulent matter. There were no intussusceptions of the bowels, but the mucous coat of the duodenum was inflamed; the other bowels congested. Stomach slightly inflamed; spleen somewhat enlarged; liver enlarged and of a greenish hue; gall-bladder filled with black bile. Kidneys and the membranes covering them inflamed; the mesocolon inflamed; omentum inflamed; colon and several parts have effusions of lymph of a yellow color—took to be bile, but not bile.

Heart had in it a long oyster-like substance; extends its tails into the arteries and veins. Lungs about the division of the trachea awfully inflamed; inflamed throughout, filled with a frothy fluid. Membranes down the aorta and about the root of the celiac and those investing the ganglions, black with inflammation; in a word, a fair case of yellow fever.

October 23d, 1825. John Cochorn, late of Cincinnati, aged about 25—a robust, strong, and healthy shoemaker. Was attacked about two weeks ago with yellow fever; lived in a low, dirty house, with brick floor. Dr. Hunt attended him the first week. I attended him the last week. I found him bleeding from the gums and nose. He complained of nothing but an occasional pain in his bowels, but was restless and uneasy; had black tongue and lips, and was very thirsty. Charcoal and nitric acid the first day. Next day, pain in the bowels very severe, and said that he had had a chill in the morning. As he had eaten a large quantity of stewed dried peaches, gave magnesia, oil, etc. They would not operate. Next day salts; no operation. Then 5 grs. dry opium. This eased his pain, and he had a good stool afterwards, viz., a copious foetid, black discharge, less thin than is common in severe cases. His skin, which had all along been yellow, about this time became of a very deep yellow, approaching to green. Spirits of turpentine, tinct. aloes, and myrrh, and castor oil with laudanum, were given alternately, to act on his bowels. Turpentine, dose one tablespoonful. Decoction of bark and wine, panada and toddy, etc., were also given. He occasionally puked; urinated tolerably freely; but nothing but a bloody water came from his bowels. Skin about the common temperature, sometimes below it; pulse generally about 65 or 70, and tolerable strong. The day before he died, he had the shattered quill-pulse. Three or four days before he died, his pulse, for nearly a whole day, was scarcely perceptible. This I attributed to a sudden cold spell of weather about that time. His breathing generally was slow, and somewhat irregular. The night before he died, he coughed and spit, and puked up a great quantity of blood. The wall was covered with it, so was the floor and bed. He kept his senses until a few minutes before



death, and seemed perfectly resigned, which may have been owing to a belief that he was not going to die.

October 23d, 1825. *Post obit* examination was made in presence of Drs. Hunt and McPheeters, five minutes after death.

The stomach and bowels were not inflamed. The bowels were, however, congested or engorged with blood, and the little veins from the bowels were much distended with blood when they reached the mesentery. The stomach was lined with a dark muco-purulent matter, or phlegm; so were the bowels. The stomach and bowels contained a quantity of black matter, mixed with the above mentioned phlegm. Intussusception was found in two places; bowels contracted in places, and on moving them, intussusception would take place in the small bowels. The spleen was greatly enlarged; the liver not much larger than usual, and put on no very unusual appearances. The gall-bladder was very much distended with a black, ropy bile, but its coats were not black. The mesocolon that incloses the pancreas was inflamed. The membranes about the root of the celiac artery were very much inflamed, but much less so than in 1823. The ganglions were diseased as in 1823, but not so much so.

The capsulæ renales were diseased. The kidneys were inflamed, and were of a morbid, yellow color. The membranes near them were inflamed.

Muscles sound. Nothing unusual about the heart. Lungs appeared to have recently adhered to the ribs by sending bands of coagulable lymph, from the pleura pulmonalis to the costalis. The left lung was very much inflamed, particularly about the left bronchial tube. On cutting into the lung at this place, a darkish purulent matter was found in abundance. The lung was very firm at one place, like liver; the right lung was also diseased in its posterior part, but much less so than the left. The brain was then examined. The tunica arachnoides was some little inflamed under the parietal bones, but the brain, with this exception, appeared healthy. The plexus choroides was of a yellow color, and somewhat inflamed. The ventricles contained a little bloody serum. Dura mater healthy. Spinal marrow not diseased, nor was the medulla oblongata.

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ART. IV.—*Houston, (Texas) as a Residence for Consumptives.* By JAMES COWLING, M. D.

Much has been written in relation to proper places of residence for the consumptive, and much has been said that has not been written. With

reference to the latter, it certainly has this advantage, that it has done little mischief when compared with the former. There is no one, I presume, whose advice and recommendation have been solicited as to the desirableness of certain localities as a residence for invalids suffering from affections of the lungs, who has not felt great uncertainty as to the proper place ; nor can we be surprised at this, when we find so much conflicting testimony on the subject, and see, year after year, those places becoming abandoned, which were formerly considered the *summum bonum*. All this is due to a more enlightened physiology and pathology dawning around us.

Among the residences for this class of patients, I am surprised that so little is known of Houston, (Texas) and its great advantages. Among the advantages, we may mention that there are comparatively but few days during the winter months in which exercise cannot be taken in the open air, either about town, or in the surrounding woods, or along the different railways, or on the bayou in fine steamers ; then there is the fresh atmosphere of the prairie to be inhaled in all its purity, giving to the invalid an ease and comfort, strongly in contrast with the excited and hurried breathing which persons suffering from affections of the lungs experience at many of the places that have been considered beneficial to this class of diseases. This is of the utmost importance, for nothing can be more conducive or possess greater influence towards the restoration of patients suffering from either incipient or developed phthisis, than the free inhalation of pure atmospheric air, provided such be not too stimulating and be of a medium temperature. Nor can anything be more erroneous than that of sending persons suffering from phthisis to places where sharp, stimulating breezes generally exist ; and I believe sea-breezes are, on these accounts, to a great extent injurious, independent of their containing much too great an amount of moisture for that class of patients. That this erroneous doctrine is indulged in to a great extent by the public, aided and fostered as it has been by numbers of the faculty, cannot be denied. What numbers has this injurious system sent yearly to Havana and other places, there to have their disease accelerated, although temporarily appearing to be benefited by the change !

Whom can we blame for this state of compliance but physicians ? I say compliance, from the fact of many following the *ipse dixit* of some name, instead of investigating and ascertaining for themselves, the desirableness or otherwise of the place of abode for invalids having diseases of the chest. Is it not of a daily occurrence that patients are advised to try a change of air ? and should such patients have a predilection for some of those so-called beneficial localities, the acquiescence

of the physician is too often obtained, although the place, in reality may be injurious. Fortunately for the public, all do not go with the current.

All acquainted with medical literature must be aware of the great change which has taken place in the last few years, in regard to many of the places which were formerly considered as highly salubrious for consumptives, but which are now looked upon as only *comparatively* so ; comparatively, from the fact that the old superstition or delusion is hard to eradicate. So long had the tide been flowing in one direction, that more than ordinary force was required to change the current. A pure and wholesome atmosphere is absolutely required for persons suffering from affections of the lungs, so that the chest may be thoroughly expanded and the necessary changes in the blood well effected, thereby aiding and promoting the real nutrition of the body by obviating any stagnation in its vessels. But should the atmosphere be too stimulating, or contain too great an amount of moisture, or otherwise, or be impregnated with impurities, the healthy change will not be accomplished ; but, on the contrary, a deleterious action will be the result.

Can too much then be said in favor of Houston and its advantages ? For a great portion of the year, the south wind is the prevailing one, blowing from the Gulf, and then crossing a large prairie, it becomes tempered, containing a sufficient amount of moisture to make it exceedingly balmy and beneficial to those suffering from chest diseases. It cannot be doubted that such an atmosphere for the weak, is of the utmost importance ; nor can it be too highly prized or praised. Nor can it be denied that the dry, sharp air recommended by many, is, in the majority of cases, decidedly injurious. To show that this opinion is not incorrect, we may take the West India Islands. Some of these are very high and dry ; Madeira, the mountains of Brazil, the high lands of Africa, etc., etc. In all these, the inhabitants living on the higher regions are affected with phthisis to a much greater extent than those residing in a more medium temperature. On the other hand, it is equally injurious for this class of persons to reside where they are subjected to strong sea-breezes, as witness Nice, Naples, Lisbon, Malta, Mauritius, Rio de Janeiro, Madras, Buenos Ayres, Havana, etc., etc. I mention these places more particularly, from the fact of their having been considered the most beneficial for the class of invalids in question.

It will be seen, I think, from the above, how necessary it is for persons suffering from affections of the lungs, to use the utmost discretion in selecting their places of abode, for much depends on the judiciousness of this step.

We would say, then, to the afflicted, in search of a proper residence,



look for a situation where there is a medium temperature, where there is a free, pure and wholesome atmosphere, where there is not too much moisture nor an excess of dryness, where there is no impediment to a free circulation of air, where there is every facility for exercise in the open air, and where cheerful and pleasant society can be met with. We cannot say too much then, in favor of a place where all these necessities are pre-eminently abundant; where the system of the patient can be placed under the sway of more genial or kindlier influences.

The history of many patients are confirmative of the great benefits to be derived from a residence in Houston. Many have arrived here, with hæmorrhage and all the other symptoms of confirmed phthisis, others so weak and prostrated, as to be obliged to be carried on shore. Such, after a residence of from ten to eighteen years, are now enjoying robust health. I therefore do not hesitate, after thorough investigation, to recommend Houston, in Texas, as an excellent residence for those suffering from pulmonary complaints, from these facts:

First. The temperature of the place is very mild. For the winter months of December, January and February, we have a temperature of about 46 degrees, Fah. This includes the twenty-four hours round, giving to many days sufficient heat to be without fire.

Secondly. The breezes prevail from the south, coming from the Gulf, then blowing across the prairie, tempering it and making it very agreeable, pleasant and healthy.

Thirdly. Every facility exists for out-door exercise, either about town or in the sheltered woods around, or open prairie, and by railway or steamboat.

Fourthly. There are well-supplied markets, good hotels, and very agreeable society, with other advantages, although not so prominent as some already mentioned, nevertheless possessing in conjunction, a beneficial influence on the patient.

Allow me to say, in conclusion, that patients following out the above suggestions, aided by proper medical advice, may rely, in most cases, upon a great if not permanent relief.

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ART. V.—*A Few Practical Hints to the Country Physician.* By W. L. GAMMAGE, M. D., of Rusk, Texas.

I HAVE often thought that the true physician was only fulfilling half of his duties, when he confined his labors to the ordinary rôle of visiting the sick and ministering to their comforts, whilst suffering pain and

affliction upon the bed of sickness ; nor does he quite accomplish all he virtually pledges himself to do, when he receives his parchment, if he only contributes the results of his varied investigations and experience to the profession through the ordinary mediums of books, pamphlets and journals. There is yet a higher office to perform ; for he is not alone a conservator of the sick but of the healthy. In the remarks which are to follow upon this subject, I wish to confine myself to the question as it presents itself to a country physician.

I venture to assume that I shall not be far wide of the mark, if I assert that scarcely less than one-half of the pain and affliction, and, consequently, deaths which occur within the range of ordinary country practice, is wholly dependent upon causes which continually present themselves to the mind of every village and country practitioner who shall happen to read this article, and as a consequence, causes, which depend more or less for their removal or modification upon the efforts, well directed and persevered in, of the physician.

There is a sordid and selfish principle (or rather want of principle) prevailing amongst those who, under the guise of our profession, have pandered long and successfully to the prejudices and ignorance of the unlearned, which rather than diminish, would tend to increase the facilities for their unholy traffic. To these men I have no word of advice. It is to the humane, the enlightened and the skilled of our profession that I would address myself, in the hope, I would fain believe not vain, that good results may be attained, and a new field, heretofore almost unexplored, opened, where good may be done outside of the legitimate *area* of the professed professionalist.

Thousands of plans have been suggested, folios have been written, and lengthy and labored discourses have been preached and spoken from the forum in regard to public hygiene, but with little practical good. The strong arm of the law, all potent in the protection of "liberty, property and life," has erected quarantines and enacted statutes for the prevention of disease and for the protection of health, all to but little effect. The "*open sesame*" has not been touched yet. You must *educate the people!* not teaching them the mysteries of nosology and the abstrusities of physiology ; not entertaining them with learned disquisitions upon the therapeutical virtues of the thousand and one vegetable and mineral remedies which are found upon our shelves and in the drug shops ; not befogging them with the origin and insertion of muscles, the ramification of nerves and bloodvessels, or the delicate structure of tissues ; but, instructing them in plain English, as to the manner, how and where they should live, so as to best avoid natural or accidental causes which tend to produce or increase disease.

Am I understood? How often have I and you, and you, my fellow-country physician, been called to a case of pneumonia or pleuritis, perhaps, where the wind, "cold and bleak from the north," came whistling in as it were through every *pore* of the half-finished cabin, making you involuntarily "shiver in your shoes" as you stood by the bedside of the poor victim to the want of *comfortable quarters*? But the want of comfortable houses, though a grievous complaint, is not the only one. Badly prepared food, sometimes half-cooked, sometimes out of season and sometimes "*not seasoned at all*," is a pregnant cause of many of those "*ills to which flesh is heir*." Not a few "spells" of cramps, indigestion, headache, diarrhœa, constipation and congestion, have dated their "*rise and progress*" from the improper and illegitimate *cuisine*. How few of the dishes prepared under the general appellation of soups for patients, in a country physician's range, deserve to class above the slops which they prepare for their cows and pigs! I know that I have seen many bowls redolent with "*strange odors*" brought to the bedside, from which the languid and over-sensitive patient turned with loathing—even disgust—not without cause; for many times a stomach goaded and stung with "forty and odd hours fast," and in the vigor of health would have sought *better metal* somewhere else.

But of all the evils which prejudice and ignorance have, as it were, entailed upon country people, (and I speak especially of these, for my professional labors have made me familiar with no other patients,) there are none so great and so ruinous as those which fall to the lot of the *mother*! In the first place, a false delicacy, y'clept modesty, gives to her an accoucheur, ignorant, and too frequently imbecile old granny of her own sex, or a maudling, old quack, whose *gray hairs* have recommended him far more than the modicum of brains which they *cover*. Were I to relate to you the sickening details of ignorance, of malpractice and of absolute quackery which I, even in my limited experience, have witnessed as the results of this *prejudice*, you would turn from it with disgust.

Two cases that are fresh in my mind, I cannot forbear alluding to. One was a young, unmarried woman, whose confinement was sought to be hidden from the world, and her shame *buried* from its gaze. A midwife was called, a child was born, and the placenta being retained, the attendant became alarmed at the excessive hæmorrhage, and absolutely did nothing. Two days afterwards—just to think of it—two days of pain and anxiety, with the life blood gushing at every motion of the body, the poor creature already doubly miserable from the too palpable evidences of her "*loving not wisely but too well*"—trembling between hope of relief and dread of the cold world's "*colder finger* of



scorn"—between life and death for forty-eight long, tedious, painful, anxious hours—two days after her delivery I was sent for; a few kind and gentle words of admonition for their delay—a soothing word to her who was

“Still for all slips of hers,  
One of Eve’s family :”

and, in fifteen minutes the poor, frail creature was relieved of her suffering, and but for that “*written trouble of the brain*,” would have been almost cheerful.

The other case in point, aptly and forcibly illustrates the evils of employing ignorant nurses to attend lying-in-women. A gentleman had spoken to me to attend his wife in her approaching confinement, but in obedience to a “penny-wise pound-foolish suggestion,” afterwards engaged a midwife. I was called in great haste, on the night of her accouchement, and arrived just in time to save her life. The attendant, from fright or some other cause, had fainted, and when I reached the house, lay in a state of perfect helplessness and insensibility upon the cabin floor. I found the child’s head impacted and the woman flooding excessively. Her delivery was effected immediately, but it was with great difficulty that I kept her alive until she reacted from a most alarming state of exhaustion which profuse hæmorrhage had induced.

How many still-born children are brought into the world annually, the victims of a mother’s prejudice and a “midwife’s” ignorance? How many mothers in the hour of travail, who but with a respite, however brief, or a little professional skill

“In the time and the hour of need”

might have lived! How many women who, after having gone through the hands of these “*manipulators*,” have dragged through a weary life, the victims of malpractice and of “*officious midwifery*”?

It has been aptly said by Dr. Morton Dowler, in a late number of your Journal, that “death proclaims his triumphs from the house-tops and in the highway, and his grim statistics excite the public pulse, but the *current suffering, too, must go for something*; the former, however, is a *fixed and published fact*, whilst the latter, when not eventuating in the former, is virtually a *local secret*.” Exactly so—a local secret! Suppose there was a public functionary employed by the Government, whose duty it should be to collect, arrange and publish to the world, the statistics of all the *current suffering* induced by malpractice and charlatanism, the result of quackery upon the part of those who profess to a knowledge of the parturient and healing art—what a storm of madness would it raise over their devoted heads! what imprecations,

loud and deep ! what summary vengeance would be exacted at their hands !

But there are other pregnant causes which do much to swell the catalogue of diseases to be met with in new countries ; in regard to which a few practical hints, given in the right time and place, might diminish, materially, human suffering, and, perhaps, death.

Badly constructed houses is one of these. Scarcely one in ten of the tenements in which the poor *live, breathe and have their being*, is even comfortable, affording neither protection from the inclement blasts of winter, nor from the suffocating heat of summer. Many of them being low, unsealed both over head and on the sides, loosely floored, or not floored at all, and neither well chimneyed nor roofed, and oftentimes being the only cabin for the varied purposes of eating, cooking and sleeping for the entire household.

But why go on ? An array of causes inductive of disease might be made, which would fill page after page, and perhaps, extend this article to an objectionable length.

In inviting the attention of the profession to the subject of public hygiene, and the baneful effects of popular ignorance and prejudice upon the well-being of society, I have accomplished all I proposed to do in the outset. It has been very truthfully said by the Editor of this Journal, that "the diffusion of general intelligence will be, as it always has been, in favor of legitimate medicine ;" and certainly, upon no subject can the people be more properly enlightened and instructed, than that which concerns most intimately their physical well-being.

Rusk, Cherokee Co., Texas, January 29, 1857.

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ART. VI.—*On the importance of Bleeding in Protracted or Tedious Labors.* By R. RILEY, M. D., of Madison Co., Mississippi.

WITHOUT any preliminary remarks, I shall proceed to extract a few interesting cases from my case book.

Case 1st. At 3, P. M., Thursday, October 3d, 1850, I was called to visit a negro woman, the property of Mr. B. S., of Yazoo Co., Mississippi. The woman had been in labor since Sunday, the 30th September, nearly ninety-six hours. I was informed by the attending midwife, that her labor had been very hard and constant since about midnight of the 30th ult., until 10 o'clock, A. M., of the day on which I saw her.

The patient was the mother of four children, and had had no difficulty with any of her former labors.

On examination, I found the vertex presenting in the third position, preceded by the left hand and right foot. (A similar case is mentioned by Dr. Meigs in his work on Obstetrics, page 394, figure 74.) There was no contraction of the uterus; the woman lay perfectly quiet, and complained of nothing but soreness of the abdominal parietes upon pressure with the hand. Pulse 80 per minute, weak, soft and easily compressed. Bowels and bladder had been sufficiently and easily evacuated. By careful exploration I easily ascertained the os uteri to be soft and dilatable. Indeed, her condition, although not what is recognized as a state of exhaustion, was far from one of hyperæmia.

What should I do? If the first condition, that of exhaustion, had been present, to have bled would have been unpardonable ignorance; but if the latter, hyperæmia, I should have been justified in resorting at once to the lancet; but as neither condition could strictly be said to exist, I was at a loss how to proceed. But arguing that, although the labor (according to the testimony of the midwife) had been powerful, the contraction of the fibres of the womb had not been complete and in unison, owing perhaps to undue rigidity of the fundus of that organ, which the loss of a few ounces of blood might relieve. I proceeded carefully to abstract from the arm about ten ounces of blood, having first guarded against danger of prostration, by procuring a bottle of brandy, administering a small portion. The pulse suffered no diminution of force, but on the contrary, rather improved in volume. I then applied to the entire abdomen flannel cloths, wrung out of hot vinegar and water, for the space of ten or fifteen minutes, when, by dipping my hand in cold water, and applying the open palm to the region of the womb, I easily brought about a strong contraction of that organ, whilst at the same time I made firm resistance with the left index finger to the descent of the foot, until at the expiration of the second pain, it ceased to obtrude. The pains continued to come on finely, and in about half an hour from the time of bleeding, she was delivered of a *still-born* child.

The woman had a good getting up, no untoward circumstance supervening to retard her recovery. She has since borne two children.

Could the descent of the foot and hand have been the only cause operating to retard labor? I used no efforts to change the position of the child, more than the force necessary to prevent the descent of the foot after re-establishing uterine contractions. The head was sufficiently engaged in the lower strait of the *pelvis* for it to have had an easy exit, if the contractions had been of the right kind; they were strong, powerful, but the muscular fibres were not *all* engaged at the *same* time.

Case 2d. I was called at 10, A. M., July 9th, 1851, to visit Mrs. B.,



of Holmes Co., Mississippi, who was in labor with her eighth child. Labor had continued fifty-two hours; presentation natural (vertex and second position;) pulse 76, soft and compressible; skin cool; os uteri soft and dilatable; waters had passed off during the first night of her labor. She was quite restless from the loss of sleep, having slept none of consequence since the commencement of labor.

I bled her twelve ounces, and gave her an anodyne, and ordered bottles of hot water to the feet. Being much fatigued, I left her in the hands of an experienced midwife, and retired to an adjoining room to get a little sleep, enjoining it upon the friends to awaken me when labor commenced again. I was very soon called to the bedside of the patient, who was having as fine pains as I ever saw, and at 11½ o'clock she was safely delivered of a fine girl. The cord was wrapped twice around the child's neck. Mother and child both did well.

The 3d, and last case that I shall mention, is that of Mrs. J. E. B., of Holmes Co., Mississippi, whom I was requested to see in consultation with Dr. \* \* \*, on the night of February 15th, 1854. I reached her at 4, A. M., on the 16th, and found her and her husband very much alarmed, having been told by Dr. \* \* \* that it was impossible to deliver her in the natural way, (and, indeed, the Doctor had made an effort to open the head of the child with a common pocket knife,) but failing to do so, had concluded to await my arrival. The case, (a *prima-para*,) presented the following features: Presentation natural; vertex and second position; pulse 100, excited, more from mental disturbance, I apprehend, than from any other cause. The uterus had ceased to act for some hours. We proceeded to bleed to the extent of fifteen ounces, and applied artificial warmth to the feet. Dr. \* \* \* was preparing an ergot tea to reproduce uterine contractions, but I happily anticipated him by gently kneading the abdomen with the hand dipped in cold water, (which I will mention, *en passant*, is a powerful and safe remedy in such cases,) and in three-fourths of an hour from the time of bleeding, she was delivered of a male child, which by others, (Dr. \* \* \* included,) was considered non-viable; but I proceeded at once to try to resuscitate it, which I happily did, after half an hour's bathing, rubbing, warming, etc., etc. Mother and child both did well, and are both living at this time, the latter bearing the mark of the *surgeon's* knife on his head.

I could mention several other cases of tedious labors that have occurred in my practice, in the treatment of which I have derived great benefit from the use of the lancet, but will simply offer the foregoing without further comment.

March 24th, 1857.

ART. VII.—*Man and his Organic Relations to Time and Space.* By WM. D. KERSH, M. D., Member of the American Association of Geologists and Naturalists; Winsboro', South Carolina.\*

THE modern Delta of the Mississippi covers an area of at least 30,000 square miles, and measures several hundred feet in thickness. The lowest amount of time it could have required for this mass of materials to accumulate is known and admitted to be many tens of thousands of years; a time, however, utterly insignificant, when compared with the lapse of ages that transpired during the deposition of the bluffs which border the swamp. Yet these Post Pliocene Bluffs, so far as the aquatic part of the *organic chain* with which geologists measure time, is absolutely nothing. However much the land animals are known to have died out, it still pertains, so far as aquatic animals are concerned, to the existing scene of things, to the existing creation. How, then, are we to conceive of the lapse of time which transpired in the (so called) Tertiary ages, during which the organic worlds underwent five extensive revolutions, extinctions and creations? Yet, as far back as the oldest of the (Eocene) Tertiary, we are still in that comparatively modern period during the whole of which the species of the vegetable and animal kingdoms, even as high as monkeys, are known to have been as perfect, as well developed, and as highly organized as they are in the existing creation.

The Mesozoic or secondary series of ages are so infinitely more remote and extended, that we have discovered and know less of the inhabitants of the lands, but the existence of mammals is proved in the oldest of these, the Triassic. The immensely extended Palæozoic lies still beyond this, and farther than its carboniferous. We know nothing of the inhabitants of the continents and islands of those extremely remote æras; but we find in all, in the Silurian or oldest of the series, that the sea was as well peopled as it is to-day, but the types were different.

The existing orders of fish, Ctenoid and Cycloid, extended back as far as the Cretaceous, beyond which time the seas were filled and refilled, again and again, with the Placoid and Ganoid orders. The Homocercal type did not extend beyond the Mesozoic; nevertheless, the ces-

MARCH 23th, 1857.

\* DEAR SIR:—Enclosed is a communication on the Organic Relations of the Human Family. Physicians and even physiologists know too little about the facts of nature to understand the comprehensive principles of its foundation; hence, I offer you this short communication. The idea I meant to convey is this: the truths of nature are confined too exclusively to naturalists or geologists, while physicians should know much on these matters so as to answer their purposes of being a leading class of civilization, etc., etc.

Yours, very respectfully,

WM. D. KERSH, M. D.

To B. DOWLER, M. D., New Orleans.

tracient sharks of the Silurian seas (that is, of the lowest *known* fossiliferous strata) were as highly organized as any fish that has ever been created since that time, and the same is true of their Cephalopod mollusks.

This, then, is but the measure of the organic time which the science of the last fifty years has effected. It is impossible for finite minds to conceive of space without limits, but the reality is embraced, as the idea was conceived by the infinite mind of its creator. Precisely so with time. *Neither limits nor numbers appertain to the times an Omnipotent Creator has exercised his prerogative over organic worlds.*

Widely different as was the order of things in the most remote bygone worlds, certain *families*, not species, have always existed. The sharks of the vertebrata, Lingula of Mollusks, etc., are of this persistent kind. The species were extinguished and renewed, and were different in every age. *Yet not more different, however, in time, than man is over space on the earth, but precisely the same.*

The other animals contemporary with man, vary in their creation and distribution over the surface of the earth, as much as any class of animals during geological times. In Australia, Marsupials were created profusely; sixty-nine species, after seven different types, to the exclusion of the Ruminantia, of the Pachydermata and of Quadrumana of the existing creation. In Africa and Asia, not a single pouched animal exists! The Galipagos Archipelago is a land of reptiles exclusively, no mammals were ever created there. In Greenland and the Falkland Islands the very reverse obtains, no reptile breathes, but mammals were created exclusively. The sloths and armadilloes were created in South America; thirty-eight species of these Edentate animals exist there, not one exists in North America above Mexico, none in Europe, none in all Asia and three-fourths of the African continent. This distribution is not peculiar to the existing creation, but the same families were created and restricted in the same countries, in the Pliocene—the great geological age that immediately preceded this.

All animals were always created in groups, nor did the grouping through time, during the geological ages, vary more than through space over the surface of the earth; nor did the persistent *families*, like sharks or Lingula, vary more in the successive epochs, than the human family does over space. Agassiz has shown that the *most important* variations in the tribes of man occur precisely *where the species of animals are different.*

It is necessary for us to know both the tendency and the absolute amount of our arguments, when we imagine that the physical variations of the tribes of man were effected by physical agencies. If such had



been the case, then the variations of species, through geological times, must be referable to the same causes. But it being well known and proved that all tribes of animals were created where we find them, both through time and over space, and the species of animals not differing more through time or space than the different tribes of the human family do; and, again, when we perceive that both animals and men show corresponding variations in their existing distribution within the same bounds and limits, we are driven irresistibly to the conclusion that whatever may be the nature of the moral responsibilities of the different tribes of the human family, they were created on the same principle as the other departments of the organic world, that is, everywhere they were originally found to exist.

ART. VIII.—*Gigantic development of the Head (\*Macrocephalus) in the Dwarf*, William Thomas Andrews; together with remarks on *Hypertrophy and Dropsy of the Brain*, and allusions to *Phrenology and Monstrosity*: By BENNET DOWLER, M. D.

THAT portion of the following history of the case of William Thomas Andrews, for which I cannot vouch, has been derived from Mrs. Andrews, mother of the boy, after repeated questionings and cross-questionings. Her answers, written in pencil in her presence, were copied, and subsequently read to, and approved by her. The attentive observer and nurse of this, her own child, and being withal apparently free from inconsistencies, contradictions and biases in her account, there can be no rational ground to distrust either her accuracy or good faith.

William Thomas Andrews, born in Greene county, Georgia, in 1840, and consequently now aged 17, was, at birth, and for two weeks subsequently, well developed, and possessed the physical conformation and physiological functions of a healthful infant.

Mrs. Andrews, a widow for the last five years, has had nine children, all of whom except William, are free from deformity, insanity, idiocy, goitre, cretenism, etc. Her family and that of her husband, including the immediate ancestors of both families, so far as known, were born in Georgia, none of whom have suffered from the diseases enumerated, nor from hereditary maladies of any kind, nor from any malformation whatever. The father of the boy died five years since from pneumonia.

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\* This Greek word, used by Hippocrates, in its literal rendering, is *long-headed*, and by him was applied, also, as the name of a people in Asia; but it was used chiefly to designate one who has a big head. The term *macrocephalus* not implying any pathological theory beyond simple big-headedness, is preferable to *hydrocephalus*, etc.

About two weeks after birth, William's head began, without previous sickness, to enlarge. This growth was rapid for twelve months. Its progress after this period, though apparently uniform up to the thirteenth year, was comparatively slow. Since his thirteenth year, the size of the head has been stationary, as determined by Mrs. A.'s measurements from time to time.

During the first year after birth, while the augmentation of the head was most active, the residue of the frame remained stationary, after which the body increased in size very slowly and slightly up to the twelfth year. At this latter date, his lower limbs appeared to be affected with rheumatism, followed by deformity or deviations from their natural directions, owing to contractions in the muscles of the legs, feet and toes.

He has never been able to walk, or even in the slightest degree to change his position in bed. He has remained all his lifetime in the horizontal position, utterly helpless.

During the early part of his life he slept excessively, but quietly and naturally. Of late, his hours of sleep are regular; indeed they have been so ever since his head ceased to grow.

His speech, which is imperfect, and generally low and whispering, commenced in his fourth year. His teeth are irregular, carious, and painful occasionally.

Up to his tenth year he appeared entirely free from diseases. About that time he began to suffer from epileptic fits, which, though mild, continue to recur at long intervals, ranging from one to two months, and, sometimes, even longer. A sleep usually succeeds each paroxysm.

At twelve years of age he was attacked with rheumatic or neuralgic pains, chiefly in his lower limbs, as already mentioned. He suffers occasionally from diarrhœa.

His appetite is moderate but somewhat irregular. Defecation and urination are performed in a voluntary manner, although I found indications of incontinence of urine, together with an ammoniacal odor, the pungency of which nearly equaled that of the volatile alkali.

His taste is accurate in regard to diets and drinks. The gratification of his appetite, which he seldom indulges to excess, is the principal theme of his broken ideas and remarks, coffee being uppermost in his thoughts and wishes.

He is fond of spiritous liquors, which, however, he seldom gets, as they disorder his system with feverish symptoms.

His sense of smell is good, probably acute; an example of which occurred in the interval of my visit: A visitor having seated himself near the boy, the latter smelling liquor in the visitor, charged him with

being drunk, which proved true, as the spectators discovered before the individual left the room. His nose is well formed.

His sense of hearing is natural. He shows an aversion to loud, unpleasant noises. He is pleased with simple music, particularly with singing, in which latter he sometimes takes a part himself. "Susannah don't you cry for me," and other negro songs please him most. His ability to listen continuously is weak, transient and broken. He hears, without apparently comprehending the coherency of a complex or extended conversation. An idea which he may be in the act of expressing, often seems to vanish before he can utter the word expressive of the same.

Vision is natural, although the eye-balls are very mobile and unsteady. The *irides* are brown, the pupils being somewhat larger and less responsive to light than natural. The mother of the boy, however, has found them to vary from extreme dilatation to extreme contraction, owing to some peculiar state of health as she thinks. Sometimes a strong light, as that of the sun, or gas-light, gives him uneasy or painful feelings.

The eyes are somewhat prominent, as if pushed a little forward. The orbital cavities seem shallow. Their outer borders are greatly expanded, the eyeballs occupying the centres which are one or two inches distant from the circular borders of the sockets. The supra-orbital ridges and eyebrows are about two inches from a straight line drawn from canthus to canthus.

His breathing is quiet, slight, twenty in the minute, with little expansion of the chest; pulse soft, natural, 72; skin pale, smooth and delicate. Although he has always been confined to the horizontal or recumbent position, he never has had any bedsores; but in the hot season he requires to be turned from side to side several times in an hour. When fatigued or uneasy from lying long in a fixed position, he expresses his wish to be changed.

The temperature of the head has always been to the touch very high, while the residue of the body, or rather his limbs, have been comparatively low. In the hot season his head sweats very much, and cooling washes are then agreeable. I found the temperature of the arm-pit  $98\frac{1}{2}^{\circ}$  Fah.

His hair, which is rather thinner than usual at his age, is soft, and of a dark chesnut color. Beard is slightly developed upon the upper lip.

This boy is a *monorchis*. The *scrotum* which is natural, contains but one *testis*. The *membrum virile* is fully developed for a boy of his age. There is an average pileous growth upon the pubes.

The spinal column is short, but regular, as is the trunk of the body. The legs are small, hairy, being semiflexed and fixed so that they cannot



be extended. The left foot is completely everted or turned round, with the instep nearly on the outer side of the ankle, presenting the sole laterally and outwardly. This complete spontaneous dislocation took place a few years ago, after having suffered from rheumatism and epilepsy, as already mentioned. The right foot sustains its natural relations to the limb. The toes, however, are constantly bent downward and inward like the closed claws of a bird.

The arms, hands and upper portion of the chest are more fully developed than the residue of the body, including the lower limbs, which are very much dwarfed.

The fingers are constantly flexed upon the palms, and the fists towards the wrists; nevertheless, these spontaneously contracted parts are supple, being easily extended, not voluntarily but forcibly, by the examiner. The boy is capable of holding, though in a feeble manner, substances, such as apples placed between the palms and the fingers.

Often when William's mind seems most vacant, inattentive and dreamy, a smile passes over his features like that of the suckling in the cradle. Whence originate these smiles, pleasing illusions which inly flit before that dim orb of intellect? It is not the physiology of the smiles of infancy nor idiotey, but those of enlightened and polished humanity, which a great French novelist (M. Sue) complains of as being incomprehensible: "There are so many kinds of smiles," says he, "who can distinguish the false from the real?"

"Nature hath framed strange fellows in her time :  
Some that will evermore peep through their eyes,  
And laugh like parrots, at a bag-piper ;  
And others of such vinegar aspect,  
That they show not their teeth in way of smile."—SHAKESPEARE.

William is not only a smiler, but occasionally a broad laughers ; which, according to the theory of Hobbs, proves this boy to be, not merry, but proud, as this philosopher maintains "that the passion of laughter is nothing else but sudden glory arising from a sudden conception of some eminency in ourselves by comparison with the infirmity of others, or with our own formerly."

"Laughing and weeping," says Prof. Dunglison, "appear to be characteristics of humanity."

The great naturalist, Linnaeus, gives a more flattering definition of humanity, for, according to him, the specific characteristic of the genus *homo*, is SAPIENS. There are others who think laughter is a better criterion than wisdom. Be this as it may, William has a practical leaning towards the school of Democritus, the laughing philosopher.

William's mind is sometimes vacant, inactive and inattentive, compared with its more habitual mental manifestations, which, at best, like the lights of the glow-worm in the dark, are intermitting, transient and feeble.

He is pleased with, and asks for, his passive kind of exercise, which consists in being conveyed from place to place in his favorite wagon, in his everlasting prostrate condition like a dead body, more helpless than infancy itself. This wagon is his cradle day and night. To him, a part of Schiller's description of the progress from the cradle, can have no application :

"The child in the cradle—

Happy suckling! to thee an infinite space is thy cradle ;  
Grow to a man, and then narrow the universe seems."

This boy remembers the donor and the price of his wagon-cradle.

He appears to have some faint notion that money is desirable. It is doubtful whether he can count beyond two or three.

He shows no marked curiosity to see or know anything whatever ; nor is he ever angry, impatient or revengeful. Although he is in some degree sensible to praise, he does not appear to make any fundamental distinctions between right and wrong, the beautiful and the ugly.

He has some notion of danger. Having pulled the trigger of a gun and exploded the cap, by which he was much frightened, during his father's lifetime, some years ago, he appears to recollect that affair, when his attention is called to it, heaving at the same time a deep sigh. At home, the family kept a fierce dog. When he barked as visitors approached, the boy often called the attention of the family to the necessity of seeing that the dog was chained. Such is the statement of the mother. When the firing of the gun was spoken of, he uttered a peculiar sigh in my presence.

When anything is promised him, he often remembers it, even after considerable intervals of apparent forgetfulness. Memory and hope are feeble, without being wholly absent. He has no pride in clothes nor any thing else. There appears to be no color which arrests his attention but red.

He has but little knowledge of places, yet he can distinguish between home and the places he has been carried to. He is not averse to company, though sometimes annoyed and fatigued by visitors. He appears to have sympathy or affection for his family, particularly for his mother and several of his younger brothers.

The great yet comparatively symmetrical expansion of the fascial skeleton from the chin upward and backward, as if designed to sustain

the superimposed colossal head, gives to the visage a large surface of a triangular shape, while the wandering, unsettled state of the eyes, the half-closed mouth, and smooth, expanded, passionless features, unmarked with the lines of thought, indicate imbecility to a greater extent, perhaps, than really exists.

Here, the molten waves of passion have neither ebbed nor flowed. Here, thoughts of the Infinite, of endless duration, of the origin and destiny of man, and of countless worlds, of space without territorial limits, of life, of death, of good, of evil and of the future, have neither agitated nor overpowered the intellect of this unfortunate.

Unfortunate? perhaps! The law of compensation applies even here to some extent. Wealth has its toils and cares; society its antagonisms and selfishness; power its hazards, anxieties and responsibilities; knowledge its exacting labors, impassable barriers and multiplying ænigmas; fame its disappointments, detractions and ephemeral duration; present possession its anticipation of loss and impending death and oblivion. These vain expectations, irrepressible fears, anticipated evils, inexorable realities and imaginable woes which sway the passions and the faculties of others to and fro, pass without perturbing this low type of humanity. On which side is there least unhappiness? It is reason which sees the precipice to which humanity is unwillingly hastening. It is reason that appreciates the contrast between illusion and reality.

The witches of Faust, in their dance upon the Hartz Mountains, laughed at the philosopher:

“Oh! He

Is far above us all in his conceit:

*Whilst we enjoy, he reasons of enjoyment.*”—GÆTHE.

“The child,” says Gæthe, “enjoys his cake without knowing who the baker was; the sparrow the cherries without thinking how they were made to grow.”

Before proceeding further, it may be proper to give the dimensions of the head of Andrews, the macrocephalus of Georgia; after which, the physiological, phrenological, pathological and anatomical suggestions, of the case, together with collateral subjects will be examined, not decided, the reader being left to draw what conclusions soever may seem best and most logical. The writer does not wish to express his own opinions, but for the most part, to write on *both sides* of some disputable points, hoping for more light.





{*Trinculo*. What have we here? a man or a fish? I do now let loose my opinion, hold it no longer; this is no fish but an islander.

*Miranda*. What is't? a spirit?

Lord, how it looks about! a spirit!

*Prospero*. No. It eats and sleeps, and hath such senses  
As we have.

*Prospero*. I pitied thee,  
Took pains to make thee speak, taught thee each hour  
One thing or other, when thou didst not  
Know thine own meaning, but would'st gabble.

*Alonso*. This is as strange a thing as e'er I looked on.

*Prospero*. He is disproportioned \* \* \* On whose nature  
Nature can never stick.  
And as with age his body uglier grows,  
So his mind cankers.—SHAKESPEARE. *Tempest*.]

## DIMENSIONS OF THE HEAD, ETC.

	Inches.
Horizontal circumference, from above the orbits, ears, along the temporal bones and upper angle of the occipital.....	35
From one meatus of the ear to the other.....	27½
From the tuber parietalia, and over the summit of the head to the junction of the frontal and nasal bones, midway between the orbits.....	28
From the junction of the nasal and frontal bones to the summit of the head, midway of the sagittal between the coronal and lambdoidal sutures, following the cranial curve.....	13
From under the chin, over the summit of the head, (a vertical circumference).....	38
From the chin, over the cranial summit, to the sub-occipital protuberance, or upper part of the nape.....	37½
Summit, or vertex, in a straight line to the chin.....	14½
Root of the nose to the chin.....	6
From one meatus of the ear to the other, over the upper lip...	12
From the chin to the pubes, according to position, 18 to 22, say	20
From the pubes to the soles, in a straight line.....	16
From the pubes along the flexed limbs.....	22
Circumference of the neck over the pomum Adami.....	13
Length of the neck, about.....	3
Length of the trunk, about.....	17

Although the neck, and particularly the *pomum Adami*, are comparatively large, the circumferential dimensions of the body, hips and legs are in accordance with the dwarfed trunk. His facial angle is equal to that of the best Caucasian type.

There has been no systematic attempt to educate this boy. His phrenological organs, particularly the intellectual, are of a high order, while his actual condition descends to the minimum of intellectuality. His almost entirety of existence, nutrition, circulation, growth, heat and life are concentrated in his colossal head, and yet so far from being "all soul" or intellect, he approximates vegetable life.

## MONSTROSITY ?

Neither the predisposing nor exciting cause of the colossal development of the head (*macrocephalus*) in this case can be clearly ascertained. It has, doubtlessly, occurred under the influence of positive, though undetected laws, as invariable as gravitation itself. Even what has been ignorantly called monstrosity, *lusus naturæ*, play of nature—

terms which have been applied to this case—so far from being a merely capricious freak of chance, is now known to belong to a branch of natural science, or physiological anatomy, possessing its own laws, which, to a certain degree, are known to be subordinated to an unity of plan, amid numerous varieties, having a uniformity of organization amid apparently fortuitous anomalies called malformations.

Monstrosity, whether simple, single, compound, duplex or triplex ; whether characterized by deficient, fused, or supernumerary organs, is relative, being anomalous not in and for itself, but such only when tested by the typical criteria proper to normal organizations. In a word, aberrations, studied by means of their own peculiar types, approximate uniformity. As science progressively illuminates organic nature, its apparent antagonisms recede and are replaced by unities, if not identities. Analogy is the high road to homology.

The phenomenal history, ante-mortem and post-mortem, of a large number of cases like that of Andrews, is wanting. Hence a scientific classification, mental, physiological, morbid and anatomical, remains to be achieved.

#### PHRENOLOGICAL CONSIDERATIONS.

Upon the supposition that Andrews' skull is filled with brain only, its size and full frontal development, as above mentioned, would, upon phrenological principles, be indicative of great intellectual ability ; and had this ability been developed, would not these principles and this ability have been invoked as mutually confirming each other, together with the system of Gall?

Without adopting or denying upon the merits of the case under examination, the truth of phrenology, its "high argument," and its alleged facts, must command attention.

Mr. Combe says that "in the brain vigor of function is in proportion to size ; *small size* in the brain is an invariable cause of *idiocy* ;" he also says "a brain may be large and diseased, and mental embecility arise from the disease ; but, although disease be absent, if the size be very deficient, idiocy will be invariable." A fundamental proposition in phrenology, advanced by Mr. Combe, is, "that every faculty desires gratification with a degree of energy proportionate to the size of the organ." He also affirms that "where all the organs appear in nearly equal proportions to each other, the individual, if left to himself, will exhibit opposite phases of character ; he will pass his life in sinning and repenting."

M. Foville quotes, without, however, adopting M. Cruveilhier's experimental exposition in regard to the removal by vivisections of the



phrenological organs, that is, the convolutions of the brain. M. Cruveilhier successively destroyed in dogs, by means of perforations in divers parts of the skull, the greater portions of the convolutions of the brain, (*le plus grand nombre des circonvolutions*;) without in the least diminishing any of the distinctive instincts, functions or faculties which have been ascribed to these cerebral organs; whereupon M. Foville adds, by way of dubiosity: "*je laisse à juger si la chose est possible*;" (*Dict. de Méd.*) He will not accept these experiments upon the dog as conclusive of the functions of that master-piece of creation, the brain of man. Well, the Napoleonic Code does not permit anatomical experiments upon the genus *homo* until twenty-four hours after death. The dog or nothing! Experiment or speculation! Cut animals or chop logic! Magendieism or idealism!

The alligator, though destitute of cerebral convolutions, being also without a facial angle, has an accurate sense of what is called the faculty of locality, striking examples of which I have witnessed—examples that would not discredit a civil engineer; it has also constructiveness, which I have witnessed, not to name other faculties which have been attributed to particular convolutions of the brain in man and animals. It has "the wisdom of the serpent," with the smoothness of the apple in the regions of several phrenological organs in the superior aspect of the cerebral hemispheres. If it has not the organic prominences, it ought to have them, according to this system.

But to return to the doctrine of Size. The late Dr. S. G. Morton, whose investigations into human crania have not been surpassed, gives, in his *Crania Ægyptiaca*, the external measurements of three series of skulls, the Pelagic, the Egyptian and the Negroid. Two of these measurements, for each of these groups, give the following results, that is to say, "the horizontal periphery," or circumference, and also what he calls "the occipito-frontal arch, from the posterior margin of the foramen magnum to the suture, which connects the os frontis with the bones of the nose:" Circumference first group—highest 21.2, lowest 19, mean 20.33 inches; second group—highest 21.4, lowest 18.8, mean 21.1 inches; third group—mean 19.6 inches.

The next measurements, the occipito-frontal, are: first group—highest 15.6, lowest 14, mean 14.85 inches; second group—highest 15.7, lowest 13.6, mean 14.6 inches; third group—mean 14.6 inches.

The circumferential dimension of the Georgia boy exceeds that of any of the Mortonian Crania of the ancients, by more than one foot and a quarter, after deducting half an inch for the skin, etc.

The boy's measurement over the top of the head to the root of the nose, commencing under the occipital protuberance, and consequently

not so far back as Dr. Morton's, at the margin of the great foramen, is, if due allowance be made for the point of departure, twice as great as that of the largest skull mentioned in his *Crania*.

While writing this article, I have looked in vain over all accessible authorities for satisfactory data concerning the dimensions of the head. Dr. Nott, of Mobile, says in that learned work, *TYPES OF MANKIND*, "deploring the absence of cranial desiderata, [data,] the idea occurred to me that such deficiency might, in some degree, be supplied by hat-manufacturers of various nations, notwithstanding that the information derived from this source could give but one measurement, viz: the horizontal *periphery*. Yet this one measurement alone, on an extended scale, would go far towards determining the general size of the brain. Accordingly, I applied to three hat dealers in Mobile, and a large manufacturer in Newark, New Jersey, for statements of the relative number of each size of hats sold to adult males. Their tables agree so perfectly as to leave no doubt of the circumference of heads of the white population of the United States. The three houses, together, dispose of about 15,000 hats annually. The sizes of hats in Dr. Nott's tables range from  $6\frac{7}{8}$  to  $7\frac{1}{2}$  inches. Omitting the relative proportions of the sizes and the external circumference of the hats, the heads, in his six classes, give circumferences respectively from the lowest to the highest, agreeably to the following measurements in inches:  $21\frac{5}{8}$ , 22,  $22\frac{2}{3}$ ,  $22\frac{3}{4}$ ,  $23\frac{1}{8}$ ,  $23\frac{1}{2}$ .

"Dr. Morton's aboriginal American races present a mean of but about  $19\frac{1}{2}$  inches; and this is substantially confirmed," says Dr. Nott, "by the fact stated to me by my friend Captain Scarrett, U. S. A. Although his head measures but twenty-two inches, it was with great difficulty that he found one hat, amid several hundred, to fit him: thus proving that the Anglo-American mean is equal to the *maximum* of the Mexican Indians, who are here, at Matamoros, more or less mixed, too, with Spanish blood. My own experience abundantly proves the correctness of these facts in the United States, and my colleague, Mr. Gliddon, who resided two years in Greece, 1828-30, informs me that he saw hundreds of the Greek regulars, at reviews, drills, or on guard, who were compelled to wind a handkerchief around their heads to prevent their newly adopted chacos, made for English soldiers, falling over their noses."

Lieut. Col. C. H. Smith, in his able work on *The Natural History of the Human Species*. (London, 1852, p., 159,) says: "We have personally witnessed the issue of military chacos (caps) to the Second West India Regiment, at the time when all the rank and file were bought out of the slave ships, and the sergeants alone being in part white, men of

color, negroes from North America, or born creoles, and it was observed that scarcely any fitted the heads of the privates excepting the two smallest sizes ; in many cases robust men, of the standard height, required padding an inch and a half in thickness to fit their caps, while those of the non-commissioned officers were adjusted without any additional aid."

The weight of Mr. Webster's brain, it would appear from Dr. Jeffries' account, is not the actual, but estimated weight, deduced from the internal capacity of the cranium and from the specific gravity of other people's brains. Dr. Jeffries includes in his estimate the space occupied by false and normal membranes, the sinuses, morbid exudations and serosity, etc., as equal to eight ounces in capacity, and as so far diminishing the cerebral mass ! Whence the conclusion drawn is, that Mr. Webster's head "was the largest on record, while the weight deviated but little from the average." The size of Mr. Webster's head is certainly not the largest on record, as given by Dr. Jeffries, namely : from the meatus of one ear to the other, 15 ; circumference,  $23\frac{3}{4}$  inches. The writer of this paper, disclaiming, however, all intention of comparing his intellect with the massive one of Webster, is, nevertheless, his equal in big-headedness, as in the above measurements, excepting the fraction of an inch in one of them. Dr. Nott, of Mobile, says : "Dr. Wyman, in a private letter, informs me that it is well known there are several heads in Boston larger than Mr. Webster's." (*Types of Man*, 453.)

Weight (reduced to grains) in some of the greatest minded and biggest headed men : Cuvier, 28,340 grains ; Dupuytren, 27,840 grains ; Daniel Webster, 27,990 grains ; Abercrombie,  $27,662\frac{1}{2}$  grains ; Spurzheim,  $27,562\frac{1}{2}$  grains.

It is remarkable that Cuvier, Dupuytren and Webster died having a diseased condition of their brains.

Marie François Xavier Bichat, considering the early age at which he died, (born 1771---died 1802) stands below no physiologist, ancient or modern, yet his skull was deformed. "His head was very remarkable, and Cloquet (*Traité d'Anatomie*, tom. i, p. 82, *planche* xxix,) has given a representation of his skull, as a specimen of the Caucasian variety of the human race. It is singularly irregular as to its formation, the left side projecting much beyond that of the opposite. The sutures are also irregular, and the defect of symmetry is as evident in the interior as it is on the exterior of the skull. The forehead is particularly large and capacious." (PETTIGREW'S *Memoirs*.)

A boy of Andrews' age would usually have a body about twenty-five or thirty times heavier than his brain.



Cuvier says that the ratio which the human brain bears to the residue of the body, at different stages, from infancy to old age, is as 1 to 22-25-30-35. The jay, jackdaw, robin-redbreast, sparrow, and even some of the apes, according to Cuvier, are rivals of man in regard to the magnitude of their brains.

Late experimental researches seem to show that the brain nearly reaches to its maximum size and weight at twenty (some authorities fix the period at from eight to sixteen,) after which the increase is slow up to fifty or sixty. It is said by some writers that the brain diminishes generally in advanced life, although satisfactory data are wanting to show either the degree or certainty of this decline, which is wholly denied by other and equally able observers.

Professor Todd concludes from the experiments extant, that the weight of the adult brain is, for the male, 48, and for the female, 44 ounces.

The conclusion of the whole matter, phrenologically speaking, is put thus: "Place man before you," says Gall, the founder of Phrenology, "and contemplate his high and prominent forehead; compare that majestic forehead with the forehead of other creatures, and you will learn why man *is* man. Place your hand upon the front and top of his head, and you will there find the sign of the alliance which his Creator has concluded with him." (Wks., vi, 291.)

Cover the face and body of the Georgia boy, O shade of great Gall, and lo! what a sublime forehead, top-head and back-head belong to William Thomas Andrews, the dwarf!

#### MACROCEPHALUS? HYPERTROPHY? HYDROCEPHALUS?

The mother and constant nurse of this boy has paid particular attention to the growth of the head, having been in the habit of measuring it from time to time.

The hair of the head in early life was straggling and thin. The scalp, which, otherwise, was precisely like that of her other children, at no time, from infancy to the present, exhibited either transparency or bulging in any part, as described by authors as usual in dropsy of the brain.

Hence, the non-transmissibility of light, the enlargement of the head agreeably to the normal or symmetrical type, and other data to be mentioned, are significant, if not conclusive facts, in their bearing upon the questions: Is this enlargement an example of simple macrocephalus? Is it a pathological hypertrophy? Or, is it hydrocephalus?

Now, whether this case furnishes a solution of any of these questions or not, the questions in themselves, in their analogous bearings, are worthy of investigation, and the more so because of their obscurity.

Perspicuity requires a distinction to be made between a macrocephalus and an example of hypertrophy of the brain. The former represents a subject with a big head, the brain and its coverings, keeping pace with each other without reference to the rest of the person or to the mental frame, and without antecedent or accompanying disease.

Hypertrophy is, soon or late, a pathological condition, although its existence as a lesion attracted but little, if any, attention before Laënnec wrote upon the subject.

Pathologists have been puzzled, on opening the skulls of children whom they had supposed to have suffered and died from dropsy of the brain, yet without having found, in many cases, any inter-cranial effusion whatever. Nay, they found the brain comparatively desiccated and hardened, its convolutions obliterated, and the size of its ventricles greatly diminished. The absence of the supposed effusion, and the unexpected condition of the brain found in post-mortem examinations, appear to have elicited the idea and established the doctrine of cerebral hypertrophy within a late period; nevertheless, the facts in this regard are not sufficiently numerous to be altogether satisfactory; neither are the characteristic symptoms, nor the differential diagnosis between cerebral hypertrophy and cerebral dropsy, established on a firm basis as yet.

How little soever the cause and peculiar characteristics of hypertrophy of the brain may be known or knowable in its inception, the morbid effects resulting from it, after the consolidation of the cranial bones, the brain outgrowing its cranial envelope, are readily understood as in other analogous cases of compression of the encephalon by tumors, sanguineous effusions, depressions of the skull, etc.

It is here, however, that the Hudibrastic doctrine applies, namely :

“ One must be dissected  
To see what part is disaffected.”

It is remarkable that, in Andrews' case, epilepsy did not appear until the skull ceased to enlarge. On the supposition that the growth of the unyielding skull was arrested without a corresponding arrest of the cerebral growth, at and after the age of twelve, this inequilibrium might rationally be supposed to cause epilepsy or other symptoms of disease.

M. Mauthner gives, as a diagnostic of hypertrophy of the brain, an unusual prominence of the back part of the skull. In dropsy, he says, the forehead is the first to present unnatural prominence. In hypertrophy, “the skull goes on acquiring increased curvature, the region of the temples continues flat, giving the head the appearance of being formed by the union of the segments of four spheres. During the

stage of the affection, the preternatural softening and thinning of the cranial bones, corresponding to the prominences of the convolutions, are distinctly perceptible, especially at the occiput. The functions of the brain become now much disturbed; headache, giddiness, etc. When the walls of the skull do not expand, the symptoms are those of active cerebral disease, the result of compression," etc.

The dropsy of the brain, if that be assumed as the cause of the enlargement of the head in Andrews' case, took place chiefly in the first year, and, consequently, before the closure of the fontanels and sutures could have taken place. Under the most favorable circumstances, wherein neither effusion nor any disturbing cause could operate to prevent the ossific process, the openings of the cranial bones would have remained, and bulgings might have been expected at such points, had a rapid dropsical effusion occurred in the first year. It is not probable that the final ossification of the cranium would have followed the symmetrical, or normal type, in bridging over these natural openings, where the water must have found the least resistance, and consequently it must have protruded more or less; at least, such a supposition is not unreasonable, according, as it does, with the description of hydrocephalus by many writers.

The symmetrical conformation of the head of the Georgian boy is favorable to the supposition, that the skull and the enclosed brain grew step by step; that the ossification of the fontanels and sutures took place in a regular manner, excepting portions of the lambdoidal and of the parieto-temporal sutures, the inter-spaces of which are very limited in extent, not appearing to be more than two or three lines wide, forming shallow sinuous tracts thoroughly ossified. The sites of the sutures appear to be well knitted.

In his Nosology, Dr. Good defines hydrocephalus, thus: "Edematous intumescence of the head; the sutures of the skull gaping."

Dr. Mackintosh maintains that in chronic (and *à fortiori* in acute) hydrocephalus, "if it attack a very young subject, the bones of the head separate to a considerable extent."

In reference to the pathological anatomy of hydrocephalus, Dr. West says: "You notice the great prominence of the forehead, and the alterations of the parietal bones, which are driven backwards as well as outwards, so that the natural relations of their protuberances are altogether changed. In the remarkable case of Cardinal, the occipital bone lies almost completely in a horizontal position." (*Lect. Child.*, 92.)

"The bones of the cranium may be *insufficiently evolved*," says Dr. Copland, "appearing unnaturally small, as is sometimes observed in idiots and epileptics; but this state may arise not only from early closing



of the sutures, but from imperfect development of the brain itself. *Microcephalia*\* was considered by Hippocrates as a cause of idiocy ; and facts showing that great diminution of the size of the head is very generally connected with weakness or privation of intellect, have been adduced by Greeding, Gall, Spurzheim, Georget, and many others not believers in the doctrine of Gall. *Enlargement*, or rather *distention* of the bones of the cranium, is frequently an attendant on chronic hydrocephalus, and the hypertrophy of the brain sometimes accompanying rickets. When the accumulation of the fluid is great, and has taken place before ossification is far advanced, this process frequently commences at several more distinct points than in the healthy state, thus generating as many distinct bones. In the majority of these cases, the skull is more than usually thin. The Museum of Guy's Hospital contains the cranium of an hydrocephalic man, who lived to the age of twenty-nine years. Its circumference is  $33\frac{1}{2}$  [ $32\frac{1}{4}$ ] inches. There is, also, in the Museum of St. Thomas', the skull of a child of two years, that measures 29 inches."

The first case above referred to by Dr. Copland, is evidently that of a man named Cardinal, who died in Guy's Hospital in 1825. The measurement, as given by Dr. C., has probably been misprinted, for Doctors Jones and Sieveking, in their late work on Pathological Anatomy, (1854,) say : "The most celebrated case of this kind is that of James Cardinal—the circumference of his skull, measured at the period of his death, was  $32\frac{1}{4}$  inches." They affirm that "the immediate pathological effect of this dropsy is to compress the parts within the skull, and to distend and prevent the due ossification of the cranium ; the frontal bone is made to protrude, and the parietal bones, from their yielding character, bulge out considerably on each side, while the intervening soft parts present fluctuation. The sutures are not formed, as in the healthy skull ; the ossification is not regular," etc.

The report in the case of Cardinal, drawn up by Dr. Bright, appears to be regarded as the most remarkable on record in Great Britain.

Cardinal's head, which, during the first fourteen years of his life, was semi-transparent, contained at death seven or eight pounds of water. "On the base, or floor, of the skull lay the brain, with its hemispheres opened outwards like the leaves of a book." "The ossification of his skull was not complete till two years before his death, the anterior fontanel being the last part that closed."

It will be seen that the head of the Georgian boy, Thomas, already exceeds the circumference of the Londoner, Cardinal's head having been

\* *Microcephalus* : from *Micros*, small, and *Kephale*, head : small-headed : a monster with an imperfect head.

at the age of 29, the time of his decease,  $32\frac{1}{4}$ , while the circumference of Thomas' head is 35 inches. From the manner and number of references to the man Cardinal's case, it would appear that this is the most remarkable one that has ever occurred in Great Britain, as already mentioned.

Prof. Dickson, of Charleston, in his able work, *Elements of Medicine*, (1855,) has collected cases of hydrocephalus from both American and foreign sources, in none of which does the measurement equal that of the Georgian boy—one excepted, and in that case there does not appear to have been any actual measurement; for Dr. McKeller, of South Carolina, who reports the case, says that “at maturity the head was *about* thirty-six inches in horizontal circumference. The case of Dr. W. M. Lee, (Abbeville, S. C.,) at mature age, gave  $28\frac{1}{2}$  inches in circumference,” ( $6\frac{1}{2}$  less than the Georgian,) “and  $19\frac{1}{2}$  from one meatus auditorious to the other;” in the Georgian, this measurement is nearly one-third more; in the case of Prof. G. A. Nott, of New Orleans, the circumference is  $28\frac{1}{2}$  inches— $6\frac{1}{2}$  less than the Georgian; in the case of Prof. P. F. Eve, of Nashville,  $33\frac{1}{2}$ —congenital—death at 15 years; in the case of J. Devine, aged 14, circumference,  $27\frac{1}{4}$ , ear to ear, over the top of the head,  $17\frac{1}{2}$ —nearly 10 less than the Georgian—nape, over the crown, to the root of the nose,  $19\frac{1}{2}$ — $7\frac{1}{2}$  less than the Georgian; J. Scott, of Elgin, aged 41, measured round the brow  $27\frac{1}{2}$  inches— $7\frac{1}{2}$  less than the Georgian—nape to nose, 20—8 less than the Georgian; case of Dr. D. Monro, at St. George's Hospital, circumference, 28 inches at 8 years—7 less than the Georgian.

Hydrocephalus, whether acute or chronic, primary or secondary, inflammatory or non-inflammatory, is a positive disease, having, according to authors, marked symptoms, variable, it may be, yet still unmistakable morbid phenomena.

Dr. Rush says that, previously to 1788, he had been unsuccessful in his treatment of dropsy of the brain, when, having renounced “the common theory of this disease,” for that which assumes “the effusion to be only the effect of a primary disease of the brain;” from this period he publicly taught that this disease is a “*phrenicula*, a species of *phrenitis*.” He says many physicians adopted his theory and practice, “particularly copious blood-letting, in consequence of which, death from dropsy of the brain is not a more frequent occurrence, than from any other of the acute febrile diseases of our country.” “Where blood-letting has failed to cure the disease, I am disposed to ascribe it to its being used less copiously than the disease required.”

Dr. Rush, in confirmation of his diagnoses and cures in this disease, says, “I am the more disposed to pronounce the cases I have described

to have been internal dropsy of the brain, from my having never been deceived in a single case in which I have examined the brains of patients whom I have suspected to have died of it."

Among the number of post-mortem examinations which he made, amounting in all to six, he mentions the quantity of water found in but two: one, a negro girl aged nine, had "*a gill*," the other "not more than a teaspoonful." Other diseases, and even accidental deaths, furnish similar dropsical, or rather normal effusions. Although Dr. Rush's pathology and pathological anatomy with regard to the quantity of serosity which he found, in no wise favors his doctrine, the doctrine itself has been very generally received, namely, that dropsy of the brain is a secondary result of active hyperæmia, or inflammatory action of the brain and its meninges. Dr. Gregory asserts that "*hydrocephalus* is a sub-acute inflammation of the membranes of the brain, and, therefore, in strict nosological language, the *phrenitis hydrocephalica* or *infantilis*."

Many, however, doubt that it is the result of acute or chronic inflammatory hyperæmia. It is, at least, a disease, whether primary or secondary.

Hydrocephalus, according to writers, is usually preceded or accompanied by disease, as fever, headache, maniacal symptoms, fits, vomiting, etc. But, if the effusion be primary, and without antecedent symptoms, can it reasonably be supposed to proceed to a vast extent, and for a period of ten years, with no other morbid phenomena than those already mentioned in the case of the Georgian boy?

Dropsy and hypertrophy of the brain are by no means likely to co-exist. Indeed, some pathologists regard chronic hydrocephalus as the result of a retarded or diminished development of the brain. Dr. West, in his excellent work on the Diseases of Children, says, "the pathology of chronic internal hydrocephalus involves questions not merely of scientific interest, but of great practical moment, for if we come to the conclusion at which some observers of high authority have arrived, that it is almost invariably the effect of arrest of the development of the brain, all therapeutical proceedings must be worse than useless. In some instances, indeed, Professor Otto is of opinion that a real cure is effected by an increased activity of the nutrition of the brain, producing hypertrophy of the organ; the fluid being absorbed, and nervous matter deposited in its stead. An atrophied condition of the brain may exist, and fluid may be poured out to fill up the vacuum thus produced to fill up the skull." These opinions have been expressed by other pathologists.

Various authors (and among them Prof. Rokitsansky) maintain that hypertrophy of the brain increases its density and weight as well as its



volume, its serosity being diminished, its membranes attenuated, its convolutions flattened, its anfractuositities obliterated, its ventricles narrowed, its vessels anæmic, its substance indurated, and even the inner table of the skull absorbed, death taking place from compression.

ART. IX.—*The Poisoning at the National Hotel.* By ALBERT W. ELY, A. M., M. D.,\* Washington, District of Columbia.

MUCH has been written, of late, on the subject of the National Hotel Epidemic, in this city. So many remarkable circumstances attend this "Epidemic," so called, that I have thought that a somewhat extended account of it might not be unworthy of your pages.

Mr. Buchanan, it will be recollected, arrived in Washington for the first time after his return from London, on the 25th of January, and immediately occupied rooms previously prepared for him at the National. It was then that this remarkable epidemic began; at least I do not recollect of hearing of it previous to his arrival. I have made some inquiries in regard to the health of the hotel before the 25th of Jan'y. and have not been able to hear that any peculiar disease was prevailing there; on the contrary, the usual good health of our Washington hotels was a subject of remark.

But scarcely had Mr. Buchanan become quietly domiciled at the National, when he was attacked with the usual symptoms indicating some mineral poison—pain in the stomach and bowels, with nausea, vomiting and diarrhœa. Having arrived in perfect health, his sudden attack of so peculiar a character could not but excite attention; and the more so from the fact that a large number of others, of all ages and sexes, residing in the hotel, were simultaneously attacked with the same symptoms.

The attack of Mr. Buchanan was slight, compared with that of many others, from the fact that his almost constant dining out kept him more from the table of the National; but still it was very severe, and it is probably to that circumstance that he owes his life. Besides, he only remained a week. Those who continued to eat and drink regularly at

\* [The following documentary evidence of a wish and a will to contribute to the pages of this Journal, by one who wields a potent pen, is published in order that "the contracting party" may be as mindful and rigid as Shylock in executing his purpose, seeing that "it is so nominated in the bond:"]

Dr. B. DOWLER—*Dear Sir:* I take this mode of renewing a correspondence which has been for some time interrupted. I have long had several interesting subjects before me, which I have thought suitable to your pages, but a variety of pressing events have always prevented me from writing. If the above article should be thought by you worthy of a place in your Journal, it is at your disposal. I remain, sincerely, your friend.

ALBERT W. ELY.

the National were soon compelled to retreat for their lives, and many of them, as is well known, died with all the symptoms of poisoning. The hotel gradually became deserted, in spite of all the efforts made to extenuate the cause of the panic and quiet the alarms of the inmates. Nothing was done to ascertain the cause of the epidemic until the hotel was nearly deserted, some of the boarders had died, and the public had become clamorous for an investigation.

The Washington Board of Health then entered upon an investigation of the matter, and arrived at the strange conclusion that this frightful epidemic, confined entirely to the walls of the National, was the result of *miasm*—that unknown something, which has ever defied the skill of the chemist, and been the stumbling block, the *scandalum magnum*, of medical science.

This report of the Washington Board of Health made about the same impression upon the minds of the intelligent citizens of Washington, as that of a bombastic Costa Rican decree against Walker. It was sneered at on the corners of the streets, and generally regarded as an attempt to throw dust in the eyes of the people. Without wishing to impugn the motives of the Board, we must say, however, that it has not contributed much to their medical reputation. They report defective sewerage and ventilation, but they fail to explain how these, even if they existed, could produce the symptoms of mineral poisons, and much less do they show how those persons fell victims to this miasm who did not lodge in the hotel, but only dined there. Many persons, too, were attacked, who only occasionally drank at the bar of the hotel. If miasm, or bad air, was the cause, we could not suppose that, without being plainly perceptible to the sense, it could pervade, in such a virulent manner, the various apartments. It would strike the senses at once, and render the apartments untenable. This, however, was not the case, as we can testify from personal observation. Or, if it were the case, in some of the lower and less ventilated apartments, it could not be so in the lofty and well ventilated rooms of the fourth story of the hotel, where lodgers, who had an abundance of fresh air and light, were nevertheless attacked.

Nor are the conclusions of the Washington Board of Health much favored by the *time* at which this deadly miasm burst forth, in such quantities as to create an epidemic. On the 25th of January, when the President arrived here, the whole city and country was bound with snow and ice, and the weather was extremely cold. By reference to my journal I find that the snow at that time was nearly a foot deep, and all railroad communications stopped. For an epidemic at such a

season to break out, as a consequence of miasmatic exhalations, would be an event almost unknown in the annals of medicine.

The defective sewerage of the hotel has also been dwelt upon by the Board as the real cause of the epidemic, but here again all their conclusions fail, for the sewerage of the National Hotel is upon the same plan and in as good condition as that of Brown's Hotel on the adjoining square, and of all the hotels of Pennsylvania Avenue.

The sewerage of all these hotels is as follows : The contents of privies, water-closets, etc., flow immediately into a large sewer under the hotels, and thence into the canal which opens into the Potomac. If, then, the exhalations of this sewer were such as to produce an epidemic in the National, why did they not produce the same in Brown's, almost adjoining, in the houses of the neighborhood, and in all the other hotels having the same sewerage? All this the report of the Board fails to explain. And, moreover, if the sewerage was at fault, why had not such an epidemic broken out before, in the heat of the summer, when everything would be more favorable to the production of a deadly epidemic?

The water, too, with which the hotel was supplied, has been alluded to as being the vehicle of the poison ; but certainly, in its natural condition, as it had flowed from the springs in the rear of the hotel for years, it could not have produced the poisoning, for otherwise it must occurred in the hotel before. How could it be, that water which had supplied that part of the city for years, and had always been found clear and salubrious, should suddenly become on the 25th of January, 1857, on the arrival of Mr. Buchanan, impregnated with some deadly poison? On this supposition, too, how can be explained the fact that families in the adjoining houses, supplied from the same springs, were not poisoned. It was observed as a very remarkable fact, and one which drove from the bar of the hotel many, if not all, of its regular frequenters, that none but those who drank in the hotel were poisoned. It is worthy of remark, too, that Brown's, and all the other hotels and dwellings in Pennsylvania Avenue, all supplied with water from springs, should not have suffered from the use of the same water, or, at least, from water which had been found, from long use, to be equal in salubrity to that of the National Hotel. The idea that rats, fed on arsenic, had poisoned the cisterns of the hotel, falls to the ground when we observe that these cisterns were so situated as to be inaccessible to rats, and further, that the water of these cisterns was only used for bathing and washing, and never for drinking or for culinary purposes.

The Washington Board of Health seem to have assumed the theory that miasm, arising from defective sewerage, was the cause of



the "epidemic," and to have shaped their investigations accordingly. The result is, that they have established nothing explanatory of the cause of the disease that prevailed, and utterly failed to satisfy the minds of the public. They do not appear to have supposed it possible that poison was administered ; when, in fact, there are really some grounds for supposing that such was the case. Had they pursued their investigations on such a supposition, they might have developed some very remarkable results. We think they should have made the supposition of the administration of poison a matter of special and elaborate investigation. It is, indeed, a subject of surprise here, considering the circumstances of the case, that they did not do so.

The grounds for such an investigation are :

First—That all the symptoms of the patients attacked, point directly to poisoning by some mineral poison.

Second—That a short time previous to the 25th of January the proprietors of the hotel are said to have had a difficulty with several of the cooks of the establishment, which resulted in their dismissal. On leaving they threatened revenge—that they would break up the hotel, etc., etc.

Third—That one of the servants of the hotel, an Irishman, has since declared that poison was thrown into the water-pipes supplying the hotel.

There certainly are sufficient grounds for an investigation, and we are at a loss to imagine why one has not been made. The hotel has been closed for many weeks, and there seems to be a disposition to "hush up" the matter, rather than open it for examination. Under the circumstances of the case, men cannot avoid thinking that some diabolical scheme must have been at the bottom of the affair, for the attempt to cast the blame upon *miasm* has utterly failed.

We are not among the number of those who suppose that it was an abortive plot of the Black Republicans to assassinate Mr. Buchanan ; we, therefore, only mention this from the fact that such a surmise has found its way into certain of the journals of the country. It was certainly a striking coincident ; but we do not believe that a single fact could be elicited sufficiently important to warrant any investigation in that direction.

We would be glad to see this poisoning "epidemic" further investigated, and believe it to be the duty of the public authorities of Washington to pursue the subject farther.

ALBERT WELLES ELY.

**ART. X.—Comatose Phrenitis. Cure.**

To the Editor of the New Orleans Medical and Surgical Journal :

DEAR SIR: While sojourning in the neighborhood of Port Hudson last summer, I was requested by J. B., Esq., to see a negro boy of his, who was afflicted with phrenitis. The following history of the case was given to me: He complained of being unwell two days previous to the time I saw him, which was about 8 o'clock at night. His master gave him a dose of ol. ricini, and ordered him to go to a stream of water which was near the house and wash himself. It appears that he went there as desired, and after bathing, lay down in the sun and fell asleep. How long he slept could not be ascertained. When he awoke he was very delirious, and being taken to the house, cold water was thrown over his head and chest.

This treatment threw him into a collapse, from which reaction had just taken place. When I saw him, his pulse was 140 and very small. I cupped him freely on the nuchæ, and prescribed twelve powders, each containing one grain of hyd. chlor. mit., to be given, one every hour, with cold applications to his head, and a dose of oil.

The following morning he was a little better, his senses having returned. He complained of a great pain in his head. The medicine not having operated on his bowels, I gave him three very active cathartic pills, and continued the mercury. Towards evening, the medicine not having affected his bowels, I gave him two drops of croton oil with a large purgative enema, and continued giving the croton oil in the same dose every hour, until he had taken twenty drops, alternating with the active enemata, but all in vain. About 10 o'clock at night he again became delirious, with an irresistible inclination to sleep, which if indulged in for a few minutes, was accompanied with stertorous breathing.

I dreaded his sleeping, fearing that it would be the sleep that knew no waking, and attempted by every means in my power to prevent it, being fully of opinion that the only chance he had of life, was in the medicine operating on his bowels. I again cupped him from the nuchæ, and bled him from the arm, and by pinching and sticking him with pins, I succeeded in keeping him awake until near morning, but with so much difficulty, that, I determined to try some more effectual means for the purpose. I applied alcohol to the back of his neck, which I set on fire, and covered it with a mustard poultice. It succeeded admirably in keeping him awake until the medicine operated, which was about 6 o'clock in the morning, when he had evacuations from his bowels, his

head being entirely relieved and free from pain. He had a rapid recovery, and was able to return to work in a week.

Respectfully,

Pointe a la Hache, La., March, '57.

YELVERTON B. EGAN, M.D.

ART. XI.—*Atresia Ani.* By A. DAVIS BRASHER, M.D., of Lake Village, Arkansas.\*

ON the 8th of March I was requested to visit the quarters on the plantation of Mr. John Sumner, residing near this place, for the purpose of examining a child, born on the 7th, who had no natural egress for the contents of the bowels. Upon examining the child, a male, I found the parts perfectly smooth, save a small indentation in the place of the anus, but which, on being sounded with a small probe, did not extend beyond a quarter of an inch in depth. On examining the child more closely, I discovered that the muscles on the left side of the face were beyond the control of the child; that they remained flaccid, and that the left side of the head was much flattened, while the left eye remained closed, although the sight seemed perfect. The mother of the child reported that it had had no discharge of urine, but that it rested and nursed well. I ordered a mild diuretic, enjoined quiet, and left it, hoping that at my next visit I should be able to discern some protrusion of the parts from the meconium. I dispatched a note, requesting the attendance of Dr. Stephen Proctor the next day, designing at that time to make an artificial opening. When I visited the child on the morning of the 9th, I found no protrusion, and Mr. S. being anxious that the operation should be performed, Dr. P. kindly offered all the assistance in his power during the treatment of the case.

The child was placed in the position for lithotomy, and an incision was made carefully in the direction of the sacrum. After descending to the depth of an inch, I succeeded in reaching the bowel, perforating, and getting a small discharge of meconium. Finding it out of my power to bring down the bowel so as to attach it to the external margin of the opening, I introduced a tent into the wound, and placed the child with its mother, ordering a mild opiate and enjoining perfect rest.

LAKE VILLAGE, Arkansas, April 7, 1857.

\* BENNET DOWLER, M.D.—*Dear Sir:* Enclosed herewith I send you the notes and observations on a case lately under my treatment, which I desire to lay at the disposal of the Medical Journal you so nobly edit. Should you not think it worthy of publication, you are at liberty to deal with it as you see fit.

With the highest sentiments of respect,

I have the honor to be, sir, your obedient servant,

A. DAVIS BRASHER.



10th---Visited the child this morning at 8 o'clock ; it rested well under the circumstances ; lost no blood from the wound, and nursed readily at the breast. Gave a dose of olive oil, and after an hour removed the tent, obtained a free discharge from the bowels, and ordered the child to be kept comfortably warm. 4 P. M., child not so well ; fretful and languid ; ordered Tinct. Opii, gtt. xx, Spts. Nit. Dulc., f. ʒj, Aqua, f. ʒij ; dose, teaspoonful, with a little sugar, when very fretful.

11th---Child reported to have rested well last night ; this morning dull and listless ; extremities cold. Ordered warm bath, and a little weak toddy. Tent removed, but no discharge ; wound granulating well apparently.

12th---Heard this morning that the child sunk at 11, P. M., yesterday.

Upon subsequently interrogating the mother of the child, I learn that the child never had the least disposition to void any urine, and that her reporting to me that the child urinated regularly, was to give such answers as she deemed would be satisfactory to me. I have also learned from Mr. S., that her first child (this being the sixth) was afflicted in the same manner with *atresia ani*, but that otherwise it was apparently perfectly formed. An operation was performed by Drs. Webb and Halson, but during its steps the bladder was unfortunately punctured, and death followed.

I do not remember of ever having heard or read of a parallel case ; of one mother having two children deformed in this same manner, and in the interim having had four perfect and healthy children. The mother, as well as the father, appears perfectly hale in every particular ; had never been sick ; in fact, scarcely knows what indisposition is. That she should have misrepresented the condition of her child in this last case, after having lost the first under like circumstances, is singular ; yet it only illustrates the fact, that practitioners and nurses cannot be too careful in their personal observations while attending negroes suffering from disease. They often misrepresent their feelings, neglect taking the medicines prescribed, and thus lead the physician to believe that his directions are followed, when, in fact, they are totally disregarded. Believing that his medicines have been taken, and perceiving no tangible effects, he too often censures his druggist for sending him inert articles, until he is astonished at the sudden demise of his patient, with the discovery that none of his remedies have been taken, or that all have been swallowed at a draft. Caution and close investigation are absolutely necessary in the treatment of disease among the sable representatives of the human family, and unless this particular is closely followed, no practitioner can hope for ultimate success.

## PROGRESS OF MEDICINE.

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ART. I.—*Researches on the Anæsthetic Effects of Amylene.* By N. G. TOURDES, Professor in the Medical Faculty of Strasbourg. *Translated from the Gazette Hebdomadaire de Médecine et de Chirurgie, of March 6, 1857, by M. MORTON DOWLER, M. D., New Orleans.*

NOTE BY M. DECHAMBRE, EDITOR.—We have in No. VI, page 97, of the *Gazette Hebdomadaire*, reported the first experiments which have been made in England and in France, on the employment of Amylene, as an anæsthetic. The article which Prof. Tourdes has now furnished us, possesses the advantage of containing, in a connected form, all the information which can be of interest to the surgeon, in relation to the discovery of Amylene, and its chemical constitution, preparation and properties, as well as the more recent experiments in support of its character as an anæsthetic. The article which we here give our readers, therefore, embraces a complete study of this agent, in view of its claims in this behalf.

### AMYLENIZATION.

THE annihilation of pain, during surgical operations, is one of the grandest results of modern discovery ; but the attendant perils constitute a drawback which always impresses itself on the mind of the operator. It is true that the danger attendant on the employment of the anæsthetics, now in use, has been exaggerated. In the hands of prudence and experience, the danger nearly vanishes, and the fatal chances are reduced to the minimum ; but the danger still exists, and is duly entertained in every operation. In view, however, of the immense benefits, compared with the low per centage of danger, the physician cannot hesitate to secure to his patient the advantages of anæsthesia. Chloroform is now the leading agent, and is used in daily practice ; nevertheless, a vague inquietude and mental reservation take possession of us to a greater or less degree in its use. We cannot avoid entertaining the hope that the time may arrive, when a new step in the march of science will lead us to an agent equally powerful with those we now possess, and giving less grounds of apprehension on the score of danger.

There exists a whole series of bodies not hitherto called into requisition, which promises to afford us *this type of anæsthetics*, by the aid of which the *desideratum* in question may be obtained.

Connected with the search for such absolute quality in any anæsthetic agent, there is another circumstance to be taken into account, which is, that each anæsthetic must be considered as having indications and special applications proper to itself, according to the age, the disease, and the duration and nature of the operation. In view of this, the announcement of a new anæsthetic agent must be received with the liveliest interest, and hence experimenters, on all sides, have hastened to test the

value of a discovery which promises to confer a new benefit on suffering humanity.

The history of Amylene may be dispatched in a few words. It was discovered by M. Balard, in 1844. Dr. John Snow, an English physician, has had the signal honor of discovering its anæsthetic properties. After conducting experiments on animals and on himself, on the 10th of November, 1856, he employed it in the cases of two young persons in the extraction of teeth, with incomplete success. On the 4th and 5th of December, he obtained very remarkable success in light operations, and on December 13th it was applied to more serious operations, Mr. Ferguson having amputated a thigh, and performed the operation of lithotomy, using Amylene as an anæsthetic.

On the 10th of January, 1857, Dr. Snow made known his discovery to the Royal Society of London, at which time Amylene had been applied in twenty-two operations. The following are the leading facts put forth by the discoverer: A period of from two to six minutes is necessary to the production of anæsthesia by Amylene, which is to be inhaled from a sponge, and the quantity employed varies from half an ounce to three ounces. Neither salivation nor nausea was observed, and the coma was less profound than that produced by chloroform. Sometimes rigidity and convulsive movements were observed. The intellectual manifestations appeared to continue in two cases, though the sensibility to pain did not exist. The respiration and the circulation are accelerated, and the face becomes turgescient.

Dr. Tyler Smith, has succeeded, through the agency of Amylene, in removing consciousness of the pains of labor, and in bringing about a complete but transient anæsthesia. The uterine contractions lost none of their force, and the drug produced, without subsequent inconvenience, insensibility during the last throes of labor.

The discovery of the anæsthetic properties of Amylene has called forth numerous able experimenters; *Le Bulletin de Thérapeutique, la Gazette Hebdomadaire, la Gazette Médicale, l'Union Médicale* and *les Archives de Médecine* have already made public the results. Certain difficulties at first presented themselves. A surgeon set out by using a sample of Amylene which was foetid and impure, having been obtained by the action of sulphuric acid. After some failure and hesitation necessarily attending a new question, the result was, that the conclusions of the English physician were, in the main, confirmed.

The purity of the agent is a matter of the first importance in respect to anæsthetics, and hence the pharmaceutic study of these substances ought to precede the examination of their practical application. In conformity with this view we associated ourself with M. Hepp, chief



pharmaceutist of the civil hospitals of Strasbourg, as our assistant, who has placed at our disposal pure Amylene. The pharmaceutic department of the present article is the work of that gentleman, and he has taken part in all our experiments, the general conclusions from which he has adopted, and I here acknowledge with gratitude his able assistance.

This article consists of three departments: I. The pharmaceutic notice of Amylene; II. The experiments made on animals; III. Cases in which it has been applied; IV. The recapitulation and conclusions.

#### I. PHARMACEUTIC NOTICE OF AMYLENE.

*Origin.*—The brandies which are distilled from the residuum of apples, grapes, herbs, olives, after expression of their fluid parts—*cœur de vie de marc*—the liquors which result from the act of fermentation of the fecula of the potato, possesses a disagreeable savor which arises from an oily matter, which is known under the name of *the essence of potato*. From this substance a great number of compounds are derived, which present so close an analogy to those obtained from alcohol, that the chemists have not hesitated to consider this essence as a true alcohol, to which they have given the name of *Amylic alcohol*.

By placing in contact with Amylic alcohol the agents of dehydration, such as sulphuric acid and concentrated phosphoric acid, fluo-boric and fluo-silicic gases, and the concentrated solution of the chloride of zinc, we obtain a carbonated hydrogen,  $C^{10}H^{10}$ , a homologue of olefiant gas, to which M. Balard has given the name of *Amylene*. The chloride of zinc is the reagent employed by M. Balard, which produces the neatest result.

By the action of heat and the chloride of zinc, the Amylic alcohol is decomposed and resolved into three unequally volatile carburets of hydrogen.

*Properties.*—M. Balard has reserved the name of Amylene for the most volatile of these carburets. It is colorless and limpid, with a specific gravity of 0.661 at  $12^{\circ}$ ; the density of its vapor has been put variously at 2.45 and 2.68; the boiling point is at  $35^{\circ}$ .

The following table shows the comparative densities of Chloroform, Ether and Amylene:

	Chloroform.	Ether.	Amylene.
Specific Gravity.....	1.506	0.715	0.661
Density of vapor.....	4.199	2.250	2.450?
Boiling Point.....	$60^{\circ}$	$35.6^{\circ}$	$35^{\circ}$

We give for specific gravity and for the boiling point of Chloroform and Amylene the results obtained by M. Hepp. The point of ebul-

lition for Amylene has already been fixed by Frankland at  $35^{\circ}$ , in place of  $39^{\circ}$ , the figure given by other chemists.

The boiling point of Amylene is below the temperature of the animal body, and, consequently, when introduced into the vessels it rapidly vaporizes, and circulating in the gaseous state is rapidly eliminated by the lungs. It is soluble in alcohol and ether, but is very nearly insoluble in water. The odor of Amylene is less agreeable than that of Chloroform, is less disagreeable than that of Ether, and it is neither burning nor irritating, and does not excite generally any disgust. At a distance it resembles the odor of naphtha.

*Inflammability.*—Amylene is highly inflammable. A sponge which has imbibed this substance takes fire rapidly, and the vapor will ignite at some distance from the sponge. Caution is, therefore, required when operations are performed by artificial light. It burns with a white flame, accompanied by but little smoke. When the flame is compared with that of ether, which is a still more inflammable body, we perceive tints, somewhat deep and lightly reddish in the flame of Amylene. Chloroform, on the contrary, burns with difficulty, and gives to its flame a greenish tint.

*Congelation.*—A curious phenomenon is produced during the use of Amylene. The evaporation is so rapid that there is deposited on the sponge little whitish crystals, formed by congelation of that body. The crystals, placed on the tongue, evaporate rapidly, leaving a sensation as that of ether.

*Preparation.*—The preparation presents no difficulty. We must commence by rectifying the amylic alcohol, shaking it with water in order to remove the alcohol which it may contain; then we distil on the chloride of calcium, collecting the product of distillation at the moment when the ebullition is at  $120^{\circ}$ . Equal parts of amylic alcohol and chloride of zinc are then to be mixed in a retort, at  $70^{\circ}$  of the aërometer of Beaumé. There must be frequent agitation while the temperature is rising, in order to facilitate the solution of the chloride of zinc. The distillation begins at about  $130^{\circ}$ . The product of the distillation is a mixture of Amylene, paramylene and metamylenes, and is rectified at the temperature of the water-bath. The most volatile part only is to be collected, and this must be agitated with concentrated sulphuric acid, which is a very effectual process for the separation of the Amylene from the other carburets, which are produced simultaneously with it. It suffices to distil the liquid, which is separated by the sulphuric acid in a dry apparatus, in order to produce the Amylene in such state of purity as to be thoroughly fitted for employment as an anæsthetic.

The Amylene obtained by the action of sulphuric acid on amylic acid, has the repulsive odor of cat's urine; owing to the existence of a compound, of a peculiar nature, containing sulphur amongst its elements, and which is separated from it with difficulty. There is obtained from this, by the employment of sulphuric acid, but little Amylene, much paramylene, ether and amylic aldehyde, the temperature being carried to  $100^{\circ}$  during this reaction.

The preparation of Amylene, by means of the chloride of zinc, is still more efficacious; but up to the present it has proven very expensive, and the great quantity of Amylene which appears necessary when this agent is employed, is with difficulty obtained. This difficulty will probably be transient, the amylic alcohol being, in itself, of but little value. It is very little used, except in the preparation of valerianic acid, and in some manufactories in which it is used in the process of clarification.

An experiment, made with paramylene, showed that it does not possess the anæsthetic properties belonging to Amylene.

## II. EXPERIMENTS MADE ON ANIMALS.

*Mode of Experimentation.*—The experiments have been made on rabbits. A bag of caoutchouc, having on one side an opening large enough to introduce the head of the animal, and terminating on the other side in a tubular prolongation, was the apparatus used. This prolongation permits the air from the exterior to penetrate into the bag, and it can be adapted to a glass tube in order to introduce whatever gas may be desired, or it may be used to receive, under a glass bell, the air expired by the animal.

A small sponge, which has been made to imbibe a determinate quantity of Amylene, say two, four or six grammes, is to be placed in the bag. This procedure permits the experimentation to be conducted with the utmost rigor, allowing the animal to be placed always in a similar or uniform condition. It respires freely with the head enclosed in the bag. The operator must take care that the inferior border of the elastic bag, yields its pressure on the jaws, and not on the larynx, which would produce fatal strangulation.

We have recognized the following symptoms :

*Inception.*—The animal remains at first motionless, with retained respiration, but soon becomes agitated, and struggles, seeking to escape from its peril. After violent agitation, and a desperate resistance, it closes its efforts, staggers and falls on its side. This effect is produced in a period which varies from half a minute to two minutes and a half, the mean period being one minute. When the animal is thus on its



side, it is not yet insensible. By pinching the extremities or the tail, motions and sometimes even convulsions take place. Here two conditions may show themselves—the animal either falling gradually into anæsthesia, becoming enfeebled slowly, or the anæsthetic period may be preceded by rigidity and by convulsive movements. The most frequent initial phenomena are rigidity and muscular tremor. The animal sometimes puts forth cries. One or two minutes elapse between the falling on the side and the complete production of anæsthesia. In sixteen experiments, this rigidity and muscular tremor occurred, and it is probable that these symptoms occurred more frequently. They were sometimes very intense, these symptoms continuing from a half to one or two minutes, disappearing when the anæsthesia was perfected. There are, then, two periods in the inception, namely, the period of voluntary resistance, continuing from half a minute to two minutes, and the period of convulsive rigidity, with tremor, which is prolonged for the same space of time. In other cases, the animals, when once prostrated on the side, become anæstheticized without convulsive rigidity.

We are unable to give the rationale of the fact, that in a series of experiments on the same animals, this convulsive period was often alternately present and absent.

*Anæsthesia.*—Anæsthesia is perfected in a period which varies from one to four, the mean period being from two to three minutes. An animal subjected to several successive amylenizations, yielded more readily to the later applications, and by prolonging them sufficiently, we have obtained an anæsthetic effect as complete as that which is produced by chloroform—an absolute insensibility, rendering the limbs pliable, and the body perfectly passive, conforming to any position in which it is placed, at the will of the operator.

This stupor, however, does not continue for a great length of time, promptly diminishing, and is quickly dissipated. When the apparatus is removed, the animal revives in one or two minutes, anæsthesia beginning to lessen almost at the very moment when the application of the agent is discontinued. The prolonged sleep attending the action of chloroform is not produced by Amylene. When the head of the animal remains retained in the bag with the sponge, the anæsthesia is prolonged by the continuance of the cause lasting many minutes, according to the quantity of Amylene contained in the sponge; but as soon as the evaporation has rarified the vapor, consciousness promptly returns. The rigidity and tremor which had preceded the anæsthesia reappear frequently when the anæsthesia begins to diminish. The animal revives a little less rapidly than in the open air, on stopping the tubular prolongation. Anæsthesia may, then, be prolonged at will by the unin-

interrupted application of Amylene, or, if it be not suspended, longer than a minute more.

*Special symptoms produced by Amylene.*—Insensibility is more rapidly produced in the posterior than in the anterior extremities, and persists longer in the former, and the hind quarters remain enfeebled for some moments. The eyes have been sometimes seen injected and weeping. The respiration has often been observed to be laryngeal and stertorous, and a sonorous rhonchus is heard, which is a symptom not at all unfavorable. The respiration has never presented that remarkable slowness that is observed under the use of the carbonic oxide. It is accelerated at first, and is scarcely retarded during anæsthesia, and when the animal begins to revive it almost always exhibits a greatly accelerated respiration.

*The Mode of Resuscitation.*—The animal revives promptly, and its reestablishment is often preceded by tremor and muscular rigidity. In sixteen experiments, we have observed these symptoms at least five times. The respiration is always accelerated. The anæsthesia is dissipated in two or three minutes, the animal arising and soon being able to walk. In ten minutes there is no longer any signs of the previous anæsthesia, even in cases of amylenization which had been continuous for half an hour.

*The Innocuity of Amylene.*—This is proven by the following facts. The same animal may be anæstheticized with this agent a great number of times without endangering its life. Its restoration is rapid after the most numerous trials. We may exhaust, in the caoutchouc bag, the effects of two, four and six grammes of Amylene, and go still further, the animal sleeping when the anæsthetic is in sufficient quantity, and reviving when the vapor diminishes, and the animal comes completely to itself in spite of the unfavorable condition presented by the confinement of its head in the caoutchouc bag.

Under similar conditions in the use of chloroform, death is inevitable, and the vitality of the animal must cease to exist in one or two minutes after the stupifacient result. Ether has presented results very nearly analogous to those resulting from Amylene. In one case, however, in which the quantity of ether in the bag was considerable, the animal succumbed. Amylene is, therefore, much less dangerous than chloroform, and, perhaps, less so than ether.

*Production of Death.*—No animal has died from the effects of Amylene, though this substance has been employed in large doses, and under prolonged action. A single rabbit died from accidental compression of the larynx, when in the stupor. Asphyxia is very easily effected when there is complete anæsthesia, the slightest impediment to the entrance

of the air into the lungs rapidly occasioning death. The larynx was found ecchymosed in this rabbit, the lungs pale red, interspersed posteriorly with sanguineous extravasations. The blood was accumulated in the right side of the heart, which was distended by a large and dense coagulum, which prolonged itself into the great vessels. A rabbit which succumbed to the effects of ether, comparatively examined, presented a strongly marked pulmonary redness, with ecchymosis of one entire lung, the blood being fluid, and containing only some diffuent coagula. The liver had a deeper tint than was exhibited in the preceding case.

*Inflammability of the Breath Charged with Vapor of Amylene.*—Can the breath of an animal anæstheticized by Amylene be ignited? This phenomenon may be readily produced when this agent is injected into the veins. M. L. Coze tells us that he has made the following experiment: About three grammes of Amylene was injected into the internal jugular vein of a rabbit, being sent towards the heart, which brought on immediately a convulsive rigidity. The eyes were so swelled that one of them seemed ready to start out of its orbit. A prompt anæsthesia succeeded to this convulsive agitation. An ignited body being placed close to the mouth, the breath took fire, each expiration projected an elongated flame, and the animal speedily succumbed. The heart and the vena cava inferior contained bubbles of Amylenic gas, which was inflammable to the touch of an ignited body.

Conjointly with M. Hepp, we have experimented with a view of determining if the breath of an animal which has been anæstheticized in the ordinary manner, contained a sufficient quantity of Amylene to render it inflammable. When the animal was stupefied, we substituted for the bag which contained the Amylened sponge, another caoutchouc pouch, which terminated in a very fine glass tube. Twice only we thought we saw a little flame produced by the application of an ignited body, though more frequently no result appeared, the expired air only agitating the flame of the match, without taking fire. The ignition was rapid when the trial was made on the expired air which traversed the Amylened sponge. The vapors which exhaled from the apparatus inflamed at a distance, each expiration producing a luminous jet of flame.

*Injection into the Blood Vessels.*—The injection of Amylene into the blood-vessels produces convulsions, a sudden stupor, inflammability of the breath, and rapid death. We have also examined the result of the injection into the arteries. This research was entered into with a view of determining some points of analogy which might be supposed to exist between Amylene, chloroform and ether. The curious experiments of M. Coze had determined the fact that chloroform, injected into the



arteries, produces an extraordinary muscular rigidity, resembling the *rigor mortis*. Sulphuric ether produced nothing of the kind, the muscles preserving their flexibility. To whatever cause this singular phenomenon owes its existence, it was of interest to determine the comparative action of chloroform and ether with Amylene. The experiments were conducted by my colleague, Professor Michel, and by M. L. Coze—the injection being sent into the crural artery and into the descending aorta. No rigor of the limbs resulted, and thus it is seen that Amylene does not here act like chloroform, but, on the contrary, it exhibits in the premises a near analogy to ether.

### III. CASES.

We have had occasion to employ Amylene in the clinic of the diseases of children. M. Professor Rigaud used it in two cases with success in the surgical clinic. The following are the details of these two cases :

Case I—Ward 67, No. 37. A child three years old, scrofulous constitution, enfeebled by destitution, entered the hospital February 16, laboring under eczema, with chronic irritation of the face, spina ventosa of several fingers and toes, granular ophthalmia, right upper eye-lid beginning to be everted and covered with granulations almost fungous. The cries and resistance of the child prevented the exploration of the transparent cornea. It was determined to anæstheticize the child by means of Amylene, (or, to use appropriate terms, to *Amylenize* the child, or to subject it to *Amylenization*.) This minor operation was performed by M. Professor Michel.

In administering Amylene, we employ a cone of thick paper, made pointed at its extremity so as to allow the air a free passage. A sponge is to be fixed by means of a pin to the base of the cone. The sponge is then to be charged with the Amylene, and the base of the cone is to be applied to the child's mouth and nostrils.

The little patient had fasted from eight o'clock in the morning—a necessary precaution at this age. The operation was commenced at twenty-eight minutes past one o'clock. The child resisted and cried, without appearing, however, to have any repugnance to the odor of the Amylene, and it struggled still more when the attempt was made to open the eye-lids. It struggled for three minutes, the sponge being charged anew two or three times. All at once the cries diminished, and then ceased, and the little patient became insensible. One of the eyes was rapidly cauterized, and sensibility returned almost immediately. The Amylene was applied again two or three times, and anæsthesia was reproduced. Profiting by this, the other eye was cauterized, and the whole operation was terminated in nine minutes.

The child did not fall into the profound coma which is so readily produced by chloroform. The anæsthesia was not carried to the point of producing muscular relaxation, which is not required in an operation of this kind. Sensibility, mobility and consciousness were suspended at two periods, for an instant, and they reappeared as soon as the anæsthetic was withdrawn. The Amylenization sufficed to extinguish pain during the rapid operation. The pulse remained at 108 after, as it was before the operation, and the respiration, accelerated by the anger of the little patient, did not become slower during anæsthesia. There was no nausea. The child came to itself almost immediately, and nine minutes after the operation a delicacy was offered it, which it swallowed with avidity.

Case II.—February 21, *M. le Professeur* Rigaud employed Amylene in the surgical clinic of the faculty of Medicine in case of the amputation of a finger, an operation rendered necessary by caries of the bone, the patient being a man of forty years of age.

A sponge, charged with Amylene, was placed in a kind of cup made with a doubled compress of gummed taffeta to the half of its height. From twenty to twenty-five grammes of Amylene were poured on a sponge, and this little apparatus was applied hermetically on the mouth and nostrils of the patient. The odor of the Amylene did not appear to impress the patient disagreeably, though the effect was but slowly produced. Three or four times a new charge of Amylene was required to be poured on the sponge. In twenty minutes light contractions were observed, accompanied with some muscular tremors, when anæsthesia was suddenly produced. The compress was removed. The insensibility continued from ten to fifteen minutes, without the necessity of having again recourse to the Amylene. It was remarked during this period of stupor, that the circulation became slower towards the end of the operation; that the respiration became calm, accompanied with a slight snoring, and that the relaxation of the limbs was not so complete as is seen in the use of chloroform. The revival of the patient was preceded by a slight muscular tremor, and by a little hilarious excitement. There was neither nausea nor salivation. The patient declared himself to have slept without being conscious of it, to have dreamt, and to have heard passing music, and to have had no sensitive notice of the operation. He came to himself promptly. In half an hour he walked about, feeling a slight vertigo, but without cephalalgia. These light symptoms were soon at an end, and the patient found himself in his ordinary condition. One hundred grammes of Amylene was the quantity employed.

*M. Rigaud* considers this first trial of Amylene as very favorable to its claims. The patient incurred no kind of risk. He did not fall into

that state of oppression and impending asphyxia which often accompanies the action of chloroform. The anæsthesia was sufficiently prolonged for the performance of a capital operation, without a renewal of the Amylene, which is a result worthy of special attention.

[Since rendering into English the above elaborate article of M. Tourdes, we have received *L'Union Médicale* for March 14, 1857, from which we translate the following notice of Amylene as an anæsthetic :]

M. Giraldès, at the sitting of the Academy of Sciences, March 2, 1857, in a communication, gave the results that he had obtained at the Foundling Hospital, in the employment of Amylene as an anæsthetic agent.

After the trials made in the London Hospitals by Dr. Snow, under the direction of the surgeons of these establishments, says the author, I deemed myself sufficiently warranted in making a trial of this new agent in cases requiring anæsthesia. Since January 24, I have used it in place of chloroform, in cases of twenty-five children of various ages, and from what I have observed I draw the following conclusions :

1. Amylene is more easily inhaled, being breathed with greater tranquillity on the part of the patient, and with less effort than chloroform.
2. Anæsthesia is very rapidly produced.
3. The anæsthetic sleep is more calm, more natural, and attended with less stertor than that produced by chloroform.
4. The anæstheticized patients rapidly assume the normal state.
5. Amylenic inhalation produces neither nausea, vomiting, nor determination of blood to the head.
6. The patients do not suffer, but resume their natural flow of spirits.

If future experience does not run counter to my observation, Amylene may, with great advantage, supersede chloroform.

*Addendum : Carbonic Oxide Gas as a Local Anæsthetic.* M. Coze.

At the same sitting, M. Coze presented the following on the use of carbonic oxide gas : Five cases in my clinic, said M. Coze, go to show the local anæsthetic effects of this gas :

1. A woman, affected with advanced uterine cancer, accompanied with intolerable pelvic pains. Vaginal douches, *five litres* of pure gas—cessation of pains. The same application, and same success, twenty times during a month.

2. A woman affected with coxalgia—right side—severe pains of the knee. Local application of the gas by means of an apparatus, with a tube adapted, permitting the issue of the air and the introduction of the gas. Pain disappeared after six hours application.

3. A girl, attacked with articular rheumatism and hysteria. Applied first to the right, and afterward to the left knee—rapid cure.



4 and 5. Two hysterical women, in whom there was rapid improvement from the vaginal douches of this gas.

ART. II.—*The Silicate and Benzoate of Soda in connection with Aconitum and Colchicum, in the treatment of Gout, Gravel, Chronic Rheumatism, Vesical Catarrh, Sciatica and various Neuralgias.* Translated and condensed from the *Journal des Connaissances Médico-Chirurgicales*, of October 1st, 1856. By M. MORTON DOWLER, M. D., New Orleans.

THE present article is a summary of a Memoir by MM. J. A. SOCQUET and J. BONJEAN, the former physician to the Hotel Dieu of Lyons, etc., and the latter pharmacist of Chambéry, Secretary of the Royal Academy of Savoy, etc., etc.

The assemblage of therapeutic agents which are here offered to practitioners, and which are designated under the generic name of *dialytic* preparations, (from *dialyo*, *I dissolve*, *I disperse*, *I destroy*,) is represented by the authors as having rendered great service in a group of diseases, presenting, to a greater or less degree, a common or analogous diathesis, viz.:

1, Articular gout; 2, gouty and rheumatismal sciatica; 3, gout of the viscera, (neuralgia of the stomach, intestines and head;) 4, gout of the kidneys, (gouty nephritis;) 5, the presence of the condition productive of urinary calculi.

The complete identity of the nature of the articular concretions and urinary gravel, explains these various diatheses to the eye of the observer, and declares itself, not only in the articular pains, but also by the morbid manifestations showing themselves in other portions of the organism; and hence are manifested sciatica, hemicrania, colic, various affections of the urinary passages, etc. In fact, we have no other ready explanation of the phenomena of repelled or retrocedent gout, than in the assumption that the deposit of uric acid or urates, (called the gouty deposit,) ceases to be precipitated in the joints and articulations, that it may throw itself on the kidneys, bladder, head, lungs and neurilema of the principal nerves. The result is colic, severe cephalalgia, paroxysms of asthma, violent pains in the kidneys, gravel symptoms, catarrhal inflammation of the bladder, sciatic and various other neuralgias.

The identity in the nature of gravel and gout finds confirmation in the fact that children born of gouty parents, often show calculous symptoms, and that parents affected with the latter, have been observed to give birth to gouty children.

The authors divide their work into two parts : first, the treatment, and, second, the pharmaceutic preparations.

THE TREATMENT.—This is based on the following principles : First, to destroy the excess of uric acid, and to dissolve the urates which exist in the economy ; Second, to modify the diathesis, that is to say, the predisposition which tends to reproduce these bodies. The treatment is *internal and external*.

*Internal Treatment*.—The medicinal agents which enter into the two formula which the authors have adopted for internal use, (pills and syrups,) have been chosen amongst those which possess, in the highest degree, the property of decomposing uric acid or the urates, and of expelling them from the animal economy, in order to prevent the renewal of the same in the fluids of the body. These agents are the *silicate of soda, the benzoate of soda, colchicum and aconitum*.

The authors sum up the *modus operandi* in the three following propositions :

1st. *The silicate of soda facilitates the elimination of uric acid*, and can so extend its influence, as to even render the urine alkaline. And, moreover, by its tonic action on the digestive organs, and by its diuretic virtues, this salt possesses great advantages over the carbonates of soda and potash, to which the alkaline mineral waters owe their great and deserved reputation in calculous, rheumatismal, gouty and neuralgic affections.

2d. The benzoate of soda, which the dialytic syrup and pills contain, transforms the uric into hippuric acid, the combinations of which are extremely soluble, whilst those of uric acid are almost of entire insolubility. This medicine, in thus modifying the portion of the acid which would otherwise have escaped the action of the silicate of soda, contributes also, in its own behalf, to diminish, sensibly, the quantity of this acid.

3d. The colchicum promptly expels, by the renal emunctories, the uric acid that may be further contained in the blood.

4th. The aconitum addresses itself specially to the *pain-element* of the disease.

*External Treatment*.—Simple, unmedicated frictions, when lightly made, have themselves an excellent effect when our purpose is to calm the suffering, and to promote the resolution of the engorgements. Their efficacy becomes still greater if they be practised with substances, the special action of which are calmative and resolute. Such, say the authors, are the principles which have guided them in the combination of agents which enter into the composition of the *liniments* they

have proposed. Thus the hydro-carbonated essences, and especially those of turpentine and naphtha, have been, even alone, employed with advantage, both in sciatica and articular pains. Mixed together after the method of the authors, with an appropriate quantity of fixed oil, containing the active principles of certain narcotic plants, we have combined in a single preparation, all the advantages that could be derived from the separate use of the essential oils and the stupefacient agents.

As to the acetic ether entering into the formula of the second *dialytic liniment* of the authors, its caluative action in articular pains have been for a long time well established. Sédillot in the old *Journal de Médecine*, Récamier, Double, Martin, Desgrange and numerous other practitioners bear witness in the premises. The observation of the authors has demonstrated its efficacy, and in combination, as they have here prescribed it, with the preparations of aconitum and arnica, it operates with still greater power.

*Adjuvant Medication.*—This has for its object, to bring to the assistance of the more active external and internal means, the mild and uninterrupted action of agents known as depuratives. Four of these preparations are here formulated, and are recommended to be alternated from week to week, in order that the effect may not be worn out by continual use of a single one of these ptisans. It is one of the laws of therapeutics, which is admitted by all, that the energy of action, in even the most active remedies, is greatly diminished, if attention be not paid to changing the preparations after a certain lapse of time. This inconvenience will very soon arise in the use of these ptisans, if the patient be restricted to a single one of their number.

THE PHARMACEUTICAL AND CHEMICAL PREPARATIONS.—The following are the processes and formulæ of the dialytic preparations :

*Silicate of Soda.*—R. Pure silica, one part ; carbonate of soda, pure and dried, two parts : After having mixed these substances in a very thorough manner, they are to be introduced into an earthen crucible refractory to heat, and which ought not to be more than half filled, and the vessel is then to be submitted to the action of a strong and continued heat, in a reverberatory furnace. The materials become at first pasty, and afterwards they liquify, after the application of a powerful heat. After remaining a certain period in a state of fusion, the liquid is to be poured on a polished stone, and allowed to cool. We thus obtain, at first, an amorphous mass of a decided alkaline taste, and of a clear, gray-brown color, according to the purity of the materials employed.



The silicate is to be then pulverized, and treated with boiling water, which only partially dissolves it. The filtered and concentrated liquor allows the salt to be precipitated in an imperfectly crystalized state, which is again dissolved by water at 100°. This new solution, when filtered and sufficiently concentrated, furnishes the silicate of soda in the desired state of purity. This silicate is readily soluble in water, and the solution thus obtained, treated by a feeble acid, allows the pure silica to be precipitated in the semblance of a white frost.

*Preparation of the Benzoate of Soda.*—This is prepared in a very simple manner, by merely saturating benzoic acid with perfectly pure crystallized carbonate of soda, both having been previously dissolved in a sufficient quantity of water. The liquor being filtered, it must be concentrated by evaporation with a moderate heat, and left to crystallize. If the deposit be not very white, it may be again treated with boiling water, and the liquid must be filtered and the evaporation renewed, and there will be produced beautiful white crystals of the benzoate of soda, in the form of needles, which are efflorescent in the air. In using the salt of commerce, we must be assured against fraudulent compounds. The benzoate of soda used, ought to be that prepared from benzoic acid procured from the *benzoin*, and not that produced by the distillation of coal. The former resembles the essential oils, in being entirely volatilized by a feeble heat, and being largely soluble in boiling water and boiling alcohol.

*Dialytic Pills.*—R. Silicate of soda, grs. cccxxv; hydro-alcoholic extract of colchicum, ℥ss; extract of the aconitum, napellus, ℥i; benzoate of soda, ℥iiss; medicinal soap, ℥i. Make into a homogeneous mass, and let it be divided into one thousand pills, and thoroughly dried. The dose is at first one, then two, three or four daily, the one half in the morning, and the other at night.

*Dialytic Syrup.*—R. Silicate of soda, ℥xxviii; benzoate of soda, ℥ix; syrup of gum, ℥cccxxii; dissolve the benzoate and the silicate, separately, in a sufficient quantity of hot water, filter and mix the two solutions with the syrup, and then concentrate by boiling. Dose, from one to two dessert spoonfuls, in a glass of depurative ptisan.

*Bituminous Dialytic Liniment.*—R. Pure naphtha, ℥liiss; narcotic oil, ℥ss; volatile oil of turpentine, ℥iiss; mix, and agitate from time to time, and filter, after some hours of repose. This liniment is of a fine green color, and ought to be limpid, and without deposit.

The narcotic oil above prescribed, is to be prepared in the following manner: R. Dry leaves of belladonna, aconitum napellus, nicotianum, cientsa, and stramonium, of each, ℥lii; olive oil, ℥clx. The leaves be-

ing reduced to a coarse powder, they are gradually to be moistened with warm water, in such manner as to render them a thick paste. After twenty-four hours' contact, add the oil, and macerate eight hours on hot cinders, frequently agitating the mixture, strain and press through the liquid and filter. This oil is extremely active, and is of a fine green color.

*Ætherated Dialytic Liniment.*—R. Acetic ether, ℥iiss; alcoholic tincture of the aconitum napellus, ℥ss: tincture of arnica root, grs. lxxv: mix and filter.

These liniments are especially used as frictions, or they may be applied on a compress to the part, or they may be used for the purpose of a local bath by means of a caoutchouc envelope, or one of gummed taffeta.

*Adjuvant Medication. Depurative ptisans.*

- (a.) Ptisan of saponaria, dulcamara, glycyrrhiza;
- (b.) Sudorific ptisan of the codex, with liquorice;
- (c.) Ptisan of fumitory, sharp-leaved dock and liquorice;
- (d.) Ptisan of ash-leaves, bugloss, with strawberry root.

ART. III.—*Extracts from the "Journal des Connaissances Médico-Chirurgicales."* Translated by M. MORTON DOWLER, M. D., of New Orleans.

*Formulae of Suppositories and Enemata in Ascarides of the Rectum.* By Professor TROUSSEAU.

I.—*Suppositories.* 1. R. Tannin, grs. xv; butter of cacao, grs. xv. Melt the butter of cacao in a mild heat, with which mix the tannin reduced to a fine powder, stirring the mixture till congelation takes place, and let the mass be poured, in a semi-fluid state, into a paper mould to give it the proper form for use.

2. R. Biniodide of mercury, gr.  $\frac{2}{3}$ ; butter of cacao, 3i. Melt the butter as above, and when it is almost cold, add the biniodide and triturate together, and shape in a paper mould as above.

II.—*Enemata.* 1. R. Soot of wood, sifted, 3vi; water, 3viii. Boil for a quarter of an hour. Give for enema, half an hour before the child goes to bed, and let it be repeated for several days.

2. R. Calomel, grs. iv; mucilage of flaxseed, 3iv. Let the calomel be suspended in the mucilage, and be given for enema, which ought to be repeated night and morning.

3. R. Bichloride of mercury, gr.  $\frac{1}{3}$  ; distilled water,  $\mathfrak{z}\text{iii}$ . Dissolve for enema, to be used as the preceding, and administered with a glass syringe.

4. R. Biniodide of mercury, gr. 1-6 ; iodide of potassium, grs. xvi ; distilled water,  $\mathfrak{z}\text{iii}$ . Triturate the two salts together with a few drops of water. The red biniodide of mercury dissolves in the presence of the iodide of potassium. The whole is to be given for an enema.

5. R. Arsenious acid, gr. 1-6 ; distilled water,  $\mathfrak{z}\text{iss}$ . Let the acid be dissolved in the water, which is to be hot. The intestine is to be cleared of its contents by a simple enema, and then the above solution is to be thrown into the rectum with a syringe of glass.

FORMULÆ OF THE "VIENNA LAXATIVE."—Professor Schützenberger of Strasbourg, gives the following as the formulæ of this preparation, and he highly extols it in recent cases of Bright's disease, etc., etc.

R. Senna leaves,  $\mathfrak{z}\text{ss}$  ; corinthian raisins,  $\mathfrak{z}\text{ss}$  ; root of polypodium, grs. xv ; coriander seed, grs. x ; bitartrate of potash,  $\mathfrak{z}\text{ss}$  ; M. Infuse in water, q. s. to form a *colatura* of  $\mathfrak{z}\text{iii}$ , in which is to be dissolved manna,  $\mathfrak{z}\text{i}$ . The effect of this liquid is to draw to the mucous membrane of the intestine, serous effusions which may be infiltrated into the tissues, and embarrass the functions of the organs of the body.

TREATMENT OF THE ITCH.—After numerous trials, repeated during a long space of time in the military hospital of Belgium, it has been found that the itch can be radically cured in two hours, by means of frictions made with the liquid sulphuret of calcium, which is prepared as follows: R. Flowers of sulphur,  $\mathfrak{z}\text{iii}$  ; caustic lime,  $\mathfrak{z}\text{vi}$  ; water,  $\mathfrak{z}\text{xxxii}$ . Boil, and when the combination is completed, leave the whole to cool, and decant into bottles, which must be then hermetically sealed. A pint of this liquid amounts to only twenty *centimes*, and  $\mathfrak{z}\text{iii}$  is sufficient to effect a cure. The following is the programme of the treatment :

1. General friction with black soap for half an hour ;
2. Simple tepid bath for half an hour ;
3. General friction with the liquid sulphuret of calcium, which must be left to dry on the skin for a quarter of an hour ;

4. Immersion and washing of the whole body in a water bath.

The whole of this can be done in two hours.

The liquid sulphuret, in evaporating, leaves a thick coating which penetrates into the recesses, and destroys both the *acari* and their ova. This method has been followed in Belgium for the last two years, with great success, and has the triple advantage of simplicity, economy and rapidity of cure.



*On the efficacy of Bromine in the treatment of Pseudo-membranous Affections.* By Dr. OZANAM.

WE can only give a translated summary of M. Ozanam's interesting paper.

He says he has found bromine to be a specific remedy in diphtheritic affections, pseudo-membranous anginas, croup, thrush, etc., and the alkaline bromides, and especially the *bromide of potassium* equally to possess this character. The solvents of false membranes he has found, by experiment, to consist of two classes; first, fluidifiant bodies, and second, disaggregant bodies.

The *fluidifiant bodies* soften more or less completely the false membrane. The alkalis have been justly considered as fluidifiant; but numerous acids possess this quality, even in a higher degree, as experiment with hydrochloric acid has proven.

The *disaggregants* at first harden the false membrane, and afterwards render it so friable that it falls into powder under the slightest contact. He gives this phenomenon, hitherto unknown, the name of *molecular disaggregation*, and bromine alone is capable of producing it. The bichromate of potash, it is true, hardens the pseudo-membrane, but without rendering it friable. The iodide hardens and browns it, so as to make it resemble tanned leather, but only renders it more firm. Bromine alone destroys the cohesive quality and separates the elements. The membrane which had even previously been treated by iodine, lost the brown color and tenacity, and became friable under the action of bromine.

The author, who had previously made a complete series of experiments, gives the two following as illustrating the whole, the one made with *bromine*, and the other with the *bromide of potassium*.

I. ACTION OF BROMINE ON FALSE MEMBRANES.—A false membrane of the length of one *centimetre*, and of half the width, firm and elastic, was immersed in a glass filled with bromated water, and was left twelve hours, at the expiration of which time it had not lost its pearly color, but took on somewhat of the brown tint of the liquid, and appeared even harder than at first. But when touched with a glass rod, to lift the membrane from the fluid, it immediately resolved itself into extremely fine particles, which separated themselves more and more. The author examined this debris with a microscope magnifying 500 diameters, and he found the elements of the false membrane, but the coërcitive force which had them organized had been destroyed, so that they were completely dissociated, and reduced to a mass of amorphous granulations. This phenomenon was reproduced at each new experiment, and

the author has designated it under the name of *molecular disaggregation*.

*The author draws the following corollary:* Bromine in solution does not render false membrane transparent, and does not act as a *fluidifiant*, but it modifies the vital force in its pathogenic organic act, and determines the disaggregation of the false membrane. Bromine is therefore adapted to the arrest and cure of pseudo-membranous affections.

II. ACTION OF THE BROMIDE OF POTASSIUM.—Three white, diphtheritic shreds, firm and pearly, were procured from the tonsils, and immersed in a concentrated solution of the bromide of potassium. They became completely transparent and soft in twelve hours, and were already diffluent, displaying, when lifted, long opalescent tracts, evidently formed by the fluidified elements of the false membrane. In three days, there did not remain a vestige of the false membrane, save only a white granulous sediment, which remained at the bottom of the vessel during repose, and which consisted of amorphous granulations, crystals of the bromide of potassium and numerous filaments of the *oidium albicans*, the parasite described by M. Ch. Robin, as existing in the matter of thrush, which the author constantly found in the false membranes of croup and angina, and of which innumerable sporules, disseminated in the atmospheric air at each expiration, explains the contagion of diphtheritic affections.

*The author draws the following corollary:* The bromide of potassium possesses the power of fluidifying potassa; and the quality of disaggregation, peculiar to bromine, renders it the appropriate agent in the cure of diphtheritic affections.

The author was led by these results to put bromine to the test of clinical experience, and began in cases in which every other remedy appeared likely to fail.

The following is the mode of administration: R. Gum potion, ʒivss; bromine, gr. 5-6—grs. viii. To be taken in the course of a day. The mixture must be kept in the dark, in order to avoid the formation of hydrobromic acid. The same dose and mode of administration is applicable to the bromide of potassium.

The author has made a collection of fourteen cases, all crowned with success, of which eleven were pseudo-membranous anginas; two cases being complicated with grave, scarlatina and gangrene of the tonsils; two cases were croup, and one was a case of confluent thrush.

The author here gives in detail, the fourteen cases above announced, which, though highly interesting, the translator of this article will not render into English for want of space. If the theory of our author should be *practically proven to be correct*, (?) bromine will soon attain

equal importance with its nearest relation, iodine, with which our French brethren medicate their coffee, chocolate, bread, butter, biscuit, beer, soda-water, sugar, salt, candy, etc., etc., etc.

The author closes with the following *résumé*: Bromine and the bromide of potassium appear to act as specifics in the pseudo membranous affections. The bromine acts as a disaggregant; the potash as a fluidifiant; but in all cases, the curative action appears to be referable more particularly to the bromine, which given alone, shows itself perfectly efficacious.

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ART. IV.—*Case of Complete Occlusion of the Vagina in a Girl of Nineteen—Accidents produced by the Retention of the Menstrual Flux.* By Dr. ROZIES, of Toulouse. (From *L'Union Médicale* of January 17, 1857;) translated for the NEW ORLEANS MEDICAL AND SURGICAL JOURNAL, by J. P. BARBOT, Apothecary.

CONGENITAL imperforation of the vagina is a rather common malformation, and scientific treatises relate many facts of this nature. Still, notwithstanding its frequent occurrence, this deformity is most generally overlooked, and it is only by accidental circumstances that, in a majority of cases, the physician's attention is called to it. In fact, it is rare that this imperforation causes a complete occlusion of the vulvo-uterine canal to the extent of the obstructing of the menstrual discharge, and producing amenorrhœa and the consequences of retention of the menses. It is so true, that amenorrhœa, due to a complete obliteration of the vagina, is an exceptional case, rarely seen; that few or no practitioners, called in to attend to a female arrived at the age of puberty, in whom the menstrual function is not yet established, will suspect the existence of a mechanical obstacle, but will use the usual therapeutic means to restore or produce the catamenial discharge. In spite of the warnings given by scientific works, he will seldom think of attributing to defective formation or organization the amenorrhœic or chlorotic symptoms he will find in these cases, but will treat them uselessly by emmenagogues and the preparations of iron. Chance only, or the urgency of the case, will make him discover the cause of this amenorrhœa. So true is this, that in some cases of complete occlusion of the vagina, the symptoms produced by the retention of the menstrual discharge have been mistaken for the signs of the last period of pregnancy, so that in our days, as in former days, says Boyer, girls with imperforate vaginas have been thought pregnant, when, in fact, they were incapable of becoming so.



This is what occurred in the following case, which I have seen recently, and to see which I called in my honorable *confrère*, Dr. Laforgue, professor of obstetrics and diseases of women in the *École de Médecine*, who was kind enough to assist me in performing the urgent operation which put an end to the sufferings of the poor girl, and to the anxiety of her disconsolate parents.

On February 20th, 1856, I was called in a hurry to the "*quartier des Minimes*" to see one of my patients, a girl of nineteen, who, for several hours, had been suffering with colic-pains, so violent as, at times, to cause her to cry out, disturbing the whole neighborhood.

When I arrived there, I found her laboring under a great agitation. She was suffering so much that she could not remain in one position an instant. She complained of violent pains in the belly, like severe gripings, which had greatly increased in intensity since she had come out of her last bath, in which she had been able to stay but a few minutes.

On feeling her belly over her clothes, I was struck with its development and its rounded and projecting shape, particularly in the infra-umbilical region, which was such that, though I was acquainted with the girl's general good character, I could not help thinking, as did every one else in the room, that she was pregnant.

Unwilling, however, to trust to deceitful appearances, and scarcely willing to believe that she was in that condition, I hastened to reassure her and the parties present, by attributing to a known cause those symptoms which had acquired an extraordinary intensity.

This girl, nineteen years old, tall and well formed, had never menstruated. Up to seventeen years of age, her health had been good; but about that period she began to experience the uneasiness and neuralgic pains consequent upon amenorrhœa. Having been consulted therefor several times by her mother, I had prescribed the preparations of iron and other means generally employed to restore and regulate the menstrual function. As long as her general health was good, this retardation, so common to young females under certain circumstances, and in certain periods of life, did not inspire any alarm.

However, in spite of state of a general good health, this patient had felt from time to time, and at periods, at first distant from one another, but in the last few months successively, pains in the loins and all the symptoms of amenorrhœa. These symptoms, which lasted from two to three days, were relieved by the application of leeches to the vulva, of baths, of mustard foot-baths, quiet and rest. In the interim, the emmenagogue and ferruginous drinks were continued, but in very moderate doses, and the patient experienced no benefit from them.

It was under these circumstances that the symptoms described above supervened with such extraordinary violence and persistence. The girl's previous conduct had been such as to dispel suspicion. I questioned her parents as to the later occurrences and symptoms previous to my being called in. I learnt that this girl, whose industrious and correct manner of living was known to all, had never yet menstruated. I also learnt that she had several times complained, while suffering from the violent pains under which she was then laboring, of an urgent desire to urinate, and of an impossibility of voiding her urine. On pressing her abdomen, I ascertained that her bladder was distended.

Having placed the patient on the edge of the bed, I immediately proceeded to catheterize her. I easily found the mouth of the urethra, but experienced some difficulty in introducing the catheter, because of an obstacle that arrested its extremity, as if the canal had undergone a deviation. I succeeded, however, by moving the catheter from below upwards, in introducing it into the bladder and drawing off a large quantity of water. This evacuation was followed by so much relief and comfort that every one was satisfied except myself and the patient, who still complained of uneasiness in the hypogastric region. On my part, in passing the catheter, I had felt a tumor in the region of the bladder; besides this, my finger, while in the vulva, had met with a resisting body, which might have been the hymen, but which was, at any rate, abnormal.

Foreseeing a return of the violent symptoms, I went for Dr. Laforgue. Pending his arrival, I ordered some leeches to be applied to the upper part of the thighs, and emollient fomentations to the abdomen.

A short time after I had left, the pains returned, and when I came back, accompanied by my *confrère*, the symptoms had again assumed their former violence.

Dr. Laforgue was struck, as I had been on my first visit, with the nature of the pains experienced by the patient. They resembled labor so much that they might deceive one, being like the expulsive pains of delivery in the second stage. Uterine contractions alone could occasion pains of that sort.

An examination having been made of the parts during one of these contractions, showed clearly that the entrance of the vagina was obliterated by a thick membrane, having the appearance of being a mucous membrane, which was distended and protruded forwards during these contractions. The mouth of the urethra was free, immediately above this membrane, which completely closed up the vagina. By means of the catheter passed into the bladder, we were enabled to feel an internal

vaginal tumor, which pressed upon the vagina and turned it towards the right side.

There was, consequently, nothing else to be done but to make a free incision, opening into this obturator membrane.

The patient having been conveniently placed, with a pointed bistoury I made a longitudinal incision into this membrane, which, at the time, was flaccid. This incision only divided the mucous membrane; there remained behind it a fibrous, resisting membrane that had not been divided. An uterine contraction coming on, this membrane was immediately protruded out through the opening made into the anterior membrane. With one cut of my bistoury, I pierced it in its centre; a gush of black, coagulated and foetid blood was forced out from the vagina. M. Laforgue, having inserted his forefinger into the incision, widened it, and immediately there gushed out, in considerable quantities at a time, great masses of semi-solid, black blood. In a very short time, a wash-hand basin was filled with this blood, which exhaled so foetid a smell that we were compelled to open the doors and windows of the room, spite of the very cold weather then raging.

This abundant flow of menstrual blood was followed by immediate and complete relief. The patient, who, for twenty-four hours, had been suffering such violent pains, was seized with a rigor and fainting fit, which, however, did not last long. She was immediately put to bed and warmly covered.

Everything went on well the balance of that day; the discharge continued two days longer. Detergent injections were made into the vagina. The fever was mild; there were no more unpleasant symptoms. After a few days of quiet, rest and attention, the cure was complete. Since that time, the menstruation has been regularly established. Twenty days after the operation, the catamenia came on; they were attended by a few colic pains. The discharge lasted two days; was blackish and thick. Since then her courses have come on every month, at first irregularly, but latterly very regularly.

The obturator membrane which had given rise to the unforeseen symptoms related above was nothing more than an imperforate hymen, which, in this female, closed up the vagina completely. The orifice of the urethra was open, and the urine flowed normally; so that, up to the time that the retention of this enormous quantity of menstrual blood had produced the above casualties, no particular phenomenon had been exhibited by the sexual organs.

In this case, as in all those of the same kind that have been recorded, the menstrual function had been going on some time before these casualties had occurred. The menstrual flux that flowed at each



monthly period was accumulated in the closed-up vagina. Menstruation went on without mischief, as long as the discharge could be contained in the valvo-uterine sac by the distension of the containing tissues ; but, when it could hold no more, the pressure exerted by the coagulated fluid upon the genito-urinary organs, and the sojourn of the blood in the uterine cavity, brought on, first, the retention of urine, and, afterwards, the uterine contractions which necessitated medical attendance, and caused suspicions not at all compatible with too complete a state of virginity, as was the case.

The obturator membrane was of a fibrous texture. It was covered on the vulvar side by the mucous membrane, which was reflected from the external organs. Besides the incision, it was found necessary to dilate the opening by the forefinger. This latter precaution, by completely tearing the membrane, entirely obviated the necessity of using any *mèches*, (tents) whose presence in the vagina is inconvenient. Spite of the enormous distension of the vagina, the complete cure was not tedious. The mechanical obstruction thereto having been removed, menstruation went on naturally and completely afterwards.

From the above case, we may deduce, as a corollary in our practice, that an examination *per vaginam*, (with due circumspection, of course,) should be made whenever we find that the menstrual function is not performed in girls who have reached puberty, and who exhibit the rational symptoms of that function.

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ART. V.—1. *Post-partem Vaginitis, with Occlusion of the Vagina.*—(Extract of a Letter to the Editor.)—2. *Imperforate Hymen.*—3. *Occlusion of the Vagina.*—4. *The Same.*—5. *Same.*

BENNET DOWLER, M. D.—*Dear Sir* : I have the case of a lady, some twenty-six years of age, the mother of two children, the youngest about two and a half years old ; patient—nervo-bilious temperament, spare-made, free from all constitutional disease, until some five months ago. From some unknown cause, she miscarried at about the second month of pregnancy. A doctor in her neighborhood was called in immediately after the first flooding commenced. The doctor thinks she miscarried the first night of the flooding ; but the flooding still continued until the eleventh day, at night, at which time, an intelligent lady—the patient's sister—says that the miscarriage actually took place, and the flooding immediately ceased. By this time she was perfectly prostrated by the continued loss of blood. Under the adminis-

tration of a second physician, she slowly recovered. She complained all the time of her illness of uterine and vaginal irritation, for which she was advised to use soapsuds with a female syringe. After she was able to be up, she soon found that she could not introduce the syringe into the vagina; in a word, the vagina had grown up. When her menstrual periods returned, no evacuation of the fluid could take place. At her monthly periods she suffers a good deal of pain; rather easy at other times.

The object of this communication is to find out from you what to do, and how to do it, and what will be the result? I was sent for, a few days ago, to see this lady. I made an examination, and found the vagina perfectly adherent to within one and a half inches of the external orifice. I detected with the finger two cross-bands running across the adhesions; the balance grown up, smooth and tight. I expect that the adhesion extends the whole length of the vagina, and, perhaps, invades the mouth of the womb.

These cases are rare with me. I refused to operate until I could have more light on the subject. In the first place, is there any serious danger from hæmorrhage in separating the adherent parts? After the operation, are the divided parts liable to adhere again, with proper precautions? Is there any danger of fatal inflammation from the operation? What is the most convenient position to place the patient in; is it on the knees and elbows? What is the danger from delay in the operation? There is no rectal nor vesical fistula in this case. There is no disturbance of the bowels nor urinary organs. What authors treat of these cases?

Will you be so very kind as to give me an answer and what information may be necessary in the case I have so imperfectly described?

There is nothing worth answering through the *New Orleans Medical and Surgical Journal*, except it would be your opinions and the treatment of such cases, which latter might interest a vast number of the readers of your *Journal*.

With high regard, I am yours,

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2.—*Imperforate Hymen, with Accumulation of Menstrual Blood within the Vagina and Uterus.* By DR. CHARLES BELL. Entire occlusion of the vagina is a rare condition. Isaac Baker Brown, of London, in his "*Surgical Diseases of Women*," mentions two instances from his experience at St. Mary's Hospital, and an extensive private practice. At the time he was consulted on them, however, there was not perfect occlusion, the catamenia escaping in the one through an opening in the membrane, and a urethro-vaginal fistula in the other. One of the ladies was twenty-nine, the other thirty-five years of age, and had been married eighteen months.

Dr. Dewees, of Philadelphia, had not seen an instance up to the publication of his Treatise on Females, in 1843. Dr. Shuttice, of Virginia, reported a case in the American Journal for 1844, in which a young lady lost about eight pounds of dark grumous blood.

A case occurred in the London Hospital, a few years ago, in which inflammation of the peritoneum followed the operation, and the patient came near losing her life. Morgagni relates a case which terminated fatally, and on examination it was found the fluid had escaped into the peritoneal sac through a rupture in a fallopian tube.

The causes which endanger life after this operation, would seem to be those producing epidemic puerperal fever; the change this fluid undergoes on the admission of air, the inflammation established by the use of injections, that resulting in the vagina from the operation and substances used for dilatation, and its extension to the peritoneum and substance of the uterus, and the too sudden evacuation of the fluid. Dr. Blundell thinks some great pathologic truth may be concealed in supposing that the lochia resemble the catamenia; but I apprehend the lochia have no particular agency, provided they do not become offensive and ichorous in the production of puerperal peritonitis.

It is not doubted that hidden influences occasionally render peritonitis more liable to supervene upon the inflammation established in the vagina and uterus after delivery, and the same inexplicable causes would tend to an inflammation of this membrane, were an operation for the removal of the fluid performed during a season of their existence. It would, therefore, be good precaution to defer this operation, unless urgently called for, till such time as these causes had passed away. As Mr. Brown very properly remarks, it is easy to understand how an inflammation in the mucous membrane of the vagina may extend to the uterus and through the fallopian tubes to the peritoneum; but I cannot so readily adopt his method of removing the hymen by a more surgical procedure than division in catamenial accumulation and long distension of the uterus. It would seem to be his opinion that the fatality of this operation depends on inflammation communicated from the vagina and uterus, at the same time, his method of removing the hymen by a circular incision at the place of its junction with the labia, could not but tend to a much more serious disease in those organs. That inflammation, also, would not be so readily resolved on account of the considerable distension necessary to prevent subsequent contraction at this point. His cases were successfully treated, but it is probable the fluid secreted at each menstrual period in the instances mentioned by this gentleman was entirely discharged through the opening in the membrane and fistula, before the recurrence of another period, consequently, there was no unnatural condition of the organs. The blood had not become depraved by the absorption and retention of an excrementitious fluid. There was *only* an obstruction at the ostium vaginae.

A case of this kind occurred in my practice on the 10th of January, 1857. The young lady was fourteen years of age, well developed and of a plethoric habit. About a year since she was attacked with suppression of urine, for which the warm bath and catheter were used, but



the occlusion was not discovered. For something more than a year she has frequently complained of headache, constipation, vertigo and dysuria. Several physicians have been consulted on her case, and she has been treated, as such cases usually are, for a variety of disorders of the genito-urinary organs. When I saw her she complained of acute pain in the pelvis and head, and frequent desire to void urine. On examination per vaginam, I found a puffy tumor bulging beyond the labia, and another in the abdomen as large as a child's head. From these circumstances and the previous history of the case, it was evident that there had been a regular secretion of menstrual blood for more than a year and a half, and that it had been retained within the uterus and vagina by an imperforate hymen.

As the pain in the region of the uterus was intense, and supposing this her menstrual period, and that the symptoms would be aggravated by the continued secretion of the fluid, an immediate operation seemed to be indicated. The patient was placed in the lithotomy position, and a visual examination made. The hymen was about two inches in diameter, lined by a mucous membrane of a red color, and situated, by its anterior attachment, at a third of an inch below the meatus urinaris, which was a little enlarged. I explored carefully with a small probe, but could find no opening into the vagina. I also passed a catheter into the bladder to preclude the possibility that a distension of this organ might cause the pelvic tumor. I made the attempt to pass a straight bistoury into the vagina, but the dense fibroid, almost cartilaginous membrane, receded, notwithstanding considerable pressure from within by the fluid, and wishing to avoid any injury from the too sudden admission of the knife, I hooked up the membrane with a tenaculum in my left hand, and holding it firmly, divided it on the instrument antero-posteriorly. Immediately a viscid fluid resembling treacle streamed from the opening, and continued, to the amount of forty or fifty ounces. The uterus was then syringed with tepid water, a plug of oiled lint introduced into the vagina, a bandage placed around the abdomen, and the patient placed in bed. The pain in the pelvis subsided. The syringing was repeated once daily for about two weeks following the operation, sometimes using *sulp. zinc*, 4 grs. to the ounce. On the second and third day the discharge became very offensive, but soon improved in that respect. A copious leucorrhœa from direct irritation was established by the dilator and the use of instruments, but gradually lessened and ceased on the removal of these causes. Some medicine was administered as preventive of any excitement which might arise, and to correct the condition of the digestive organs, and no untoward symptom supervened. Three weeks from the date of the operation, the patient was attacked with a severe bilious remittent fever attended with considerable peritonitis, which, fortunately, did not extend to that portion of the membrane that passes over the uterus, the little discharge that continued was slightly sanguineous at times during this sickness, but scarcely sufficient to suppose the recurrence of a menstrual period.

It has been advised to make a stellated or crucial incision, and remove the angular pieces of membrane, but I do not think the process would be attended with advantage in a membrane of this character, which was

at least a quarter of an inch in thickness. The annular cicatrix in an already tough membrane would be still more unyielding, while the danger of vaginitis from the irritation of what remained would not be diminished. The present purpose of the vagina is a conduit for the menstrual discharge, and many years may elapse, should it not become obliterated within that period, before what remains will require removal. In the meantime, the uterus will regain its natural size and condition, the vaginal mucous membrane will become less obnoxious to inflammation, the constitution recover from any depraved condition which might augment the danger of subsequent disease, and it could then be removed without the risk of vaginitis, metritis, or constriction at the vulva.—Nantucket, Feb., 1857.—*The Medical World*.

3. *Occlusion of the Vagina*.—June 25th, Mrs. A., twenty-two years of age, had inflammation of the vagina, following parturition, three months since. There now exists a closure of the vagina with cicatrices in the integuments, giving rise to the suspicion that there has been laceration of the perineum. After some manipulation, a probe was forced into the vagina, and with the aid of a grooved director, bistoury and spatula, the adhesions of the walls of the vagina were broken up. These adhesions varied in extent in the antero-posterior direction, from half an inch to one inch and a half.—*Prof. W. H. Mussey, M. D., in Cin. Med. Observer, January, 1857*.

4. *Complete Occlusion of the Vagina and Retention of Menses*.—*Relieved by an Operation through the Rectum*. By FRANK HASTINGS HAMILTON, M. D., Buffalo.—Mrs. S., of —, æt. 35, was brought to me Oct. 19, 1853. Six months before this she had miscarried when in her fourth month of pregnancy. The placenta was retained several days, inducing, by its decomposition, a violent metritis and vaginitis, which resulted, after a few weeks, in a complete closure of the vagina. Since then she has had occasional diarrhœas, and sometimes discharges of blood, especially about the time of her menstrual periods. She has also at such periods a sense of fulness in her loins, and a feeling of weight and pressure in her rectum.

I found the vagina completely closed to within about two inches of the vulva; the rectum and bladder seeming to be in immediate contact. There was no perceptible fulness of the abdomen, nor could I feel any fluctuation through the vagina.

Believing that I could not reach the uterus through the vagina without the risk of opening into either the rectum or bladder, and observing that her health was not greatly impaired, and especially trusting that the period was near when she would cease to menstruate, I declined any surgical interference.

From this time for a period of about two years, she remained very much as when I first saw her, when she was visited by a traveling surgeon, who offered to give her immediate relief by an operation. The operation was made in the presence of her family physician, and consisted in an incision from the vagina directly through into the rectum, as the sequel showed, though, at the time, this fact was not known. The surgeon supposed he had entered the womb, but that it was empty. A

hæmorrhage followed which was very near proving fatal. The wound into the rectum closed readily, and she was left in the same situation as before, except that she was much weakened by the bleeding.

March 6th, 1856, I was summoned by telegraph to see her, and I found her on the 7th suffering very greatly from the pressure of the accumulated menstrual fluid. For several months, at each period, she had experienced great pain, but during the last four weeks there had been no relief, except as it was afforded by chloroform in pretty full doses. She had been almost constantly confined to her bed; the enlarged uterus could be distinctly felt in the front of the belly and in the rectum. Examining with a curved probe introduced into the urethra, and with the forefinger of my right hand in the vagina, I easily ascertained that the bladder was so deflected downward at the end of the vaginal *cul de sac*, that it would be impossible to reach the womb in this direction without opening the bladder. I therefore determined, as the only alternative, to open the womb from the rectum.

Placing my patient upon the side of the bed, I carried a trocar and canula upon the forefinger of my right hand into the rectum, and then thrust forward the trocar into the womb. On withdrawing the trocar there began to escape through the canula a dark brown, uncoagulated, inodorous fluid. I immediately pushed my finger along beside the canula, and, without effort, tore open the womb in every direction, the walls of which were exceedingly thin. About one pint of this menstrual fluid was evacuated. With my finger, I was able to explore the interior of the womb very freely, and I could not feel anything like a neck, the closure in that direction was so complete. On withdrawing my finger, I noticed that the size of the opening which I had made was very much diminished by a contraction of the walls of the uterus.

Four months after this operation was performed, I learned that Mrs. S. had enjoyed uninterrupted good health from the date of the operation, and an entire release from pain. She has menstruated regularly at each period, and without inconvenience.—*Buffalo Med. Jour.*

5. *A Case of Atresia Vaginæ in a Parturient Female.* By M. PENDLETON, M. D., Louisa County, Va. Operation of Vaginal Section. Delivery with Forceps. By J. H. CONWAY, M. D., Professor of Obstetrics, etc., in Medical College of Virginia.—*Previous History of the Patient.* By DR. PENDLETON.—Mrs. \* \* \*, of the county of Louisa, fifty miles from Richmond, aged twenty-four years; married seven years; always enjoying a vigorous constitution; had what was supposed to be an abortion in the spring of 1853, the process being protracted, and attended with a most alarming flooding. The physicians in attendance very properly used the tampon, and from the obstinacy of the hæmorrhage and the extreme exhaustion of the patient, felt constrained to let it remain for some days. Being called, in the meantime, in consultation with the attending physicians, I found her as pale as death, her pulse countless and scarcely perceptible, and the vital forces so nearly exhausted that no concern was felt by any of us about the tampon that still remained in the vagina, whilst every attention was given to such means as promised to keep soul and body together. At length, the symptoms improving, the tampon was removed. The patient



continued in a most exsanguined condition for some time, but gradually improved, until her health seemed fully restored in twelve months from this attack.

About this time she suffered excruciating pain in the uterus, which lasted for several days, and then gradually subsided, leaving the patient with an uncomfortable sensation of dull pain and weight about the womb. She continued to experience these paroxysms once a month for some time, but never menstruated.

I was again consulted, and so great were her sufferings that we gave her chloroform. The next morning there was a sudden gush of the most offensive secretions, which we took to be long-retained menstrual fluid. After this her health improved steadily, the menses flowing at the regular periods, sometimes with difficulty and attended with pain, and sometimes with no pain or difficulty whatever.

Her family physician, Dr. Isbell, now no more, told me that he made a speculum examination, and that he found a perfect occlusion of the vagina, yet she continued to menstruate, as above stated, for months, until about the last of November, 1855, when she exhibited signs of pregnancy, from which period until parturition commenced she enjoyed the most perfect and blooming health.

When taken with labor I was called to attend her. Her pains were strong but short, and at intervals of five to ten minutes. Remembering the history of her case, with no little solicitude I proceeded to make a digital examination. At once it was too evident that there was atresia of the vagina, about four inches from the external vulva. There were several slightly projecting teats—feeling like warts or projecting cicatrices, the largest of the size of a large pea, the others much smaller. Not the least opening could be detected by the finger. These teats were on the left side of the septum or partition formed by the closed vagina. In the absence of uterine contractions, something firm like the head of the child was felt, but so thick was the dividing wall that it was difficult to say certainly what was the prominent presentation. During the contractions of the uterus nothing firm could be felt; but, on the contrary, there was an elastic and somewhat fluctuating sensation; which signs became more and more distinct as labor continued; and the partition wall having grown thinner, no doubt was left that the head presented, and that the waters were protruded and were pressing the septum forward with a violence which made me fear that the whole vagina would be torn from its attachments. Finding that things were at an awful pass, and that nothing short of an operation could save the mother from certain death, and viewing the case as one of great complexity and danger, I had, very early in the affair, called in a promising young physician, who had but recently settled in the neighborhood, (Dr. John Gardner,) who fully concurred with me in every particular. We at once determined to send to Richmond for Dr. Conway, the distinguished Professor of Obstetrics in the Virginia Medical College, who, with Dr. Peachy, arrived about half-past 10 o'clock, a. m., on the 28th of August ultimo, about thirty-six hours from the commencement of labor.

I will not describe the case more fully, as I only designed to give the previous history, preferring that my friends Drs. Conway and Peachy

should describe the operation they so skilfully and successfully performed.

I will only add that, under the most rigid antiphlogistic treatment, there followed but little inflammation and fever, and adhesion was prevented by passing the finger, once a day, in a circular direction, where the septum had been. Injections of milk and water, (sometimes flax-seed tea,) were thrown up, with as much force as possible, once a day. And now, I am happy to say, both mother and child are well.

*History of the Operation, by Dr. Conway.*—On the morning of the 28th of August last, I received a note from Drs. Pendleton and Gardner, requesting me to visit Mrs. W., of Louisa county. They stated that she was in labor, and had occlusion of the vagina. I immediately made preparation to go, and with my friend Dr. Peachy, who kindly consented to accompany me, reached the residence of Mr. W. about 11 o'clock, A. M.

After hearing the history of the case, I proceeded to make a vaginal examination by the touch, and found a membranous septum extending from a point a few lines above the meatus urinaris upwards and backwards towards the posterior cul de sac of the vagina, thus dividing that canal into two cavities, an inferior or vulvar, and a superior or uterine cavity. The anterior origin of the atresia was about an inch from the vulva, while the posterior attachment was distant from the commissure of the perineum about two and a half inches—making the posterior wall of the vulvar cavity one and a half inches longer than the anterior.

I also found, as Dr. Pendleton informed me I would, four or five carunculae about one-fourth of an inch behind the mouth of the urethra, in the centre of which I felt a depression that I thought possibly might be the meatus itself, drawn backwards by the adhesion between the anterior and posterior walls of the vagina. During a pain I could distinctly feel a bulging of the parts, and to the touch they conveyed a sense of fluctuation, as if the os uteri were fully dilated, and the tumor formed was caused by the descent of the membranes, but it was caused for the most part by an accumulation of "the show." During the intervals of the pains I could distinguish a hard, resisting surface, which I took to be the head of the child.

Drs. Pendleton and Gardner having already explored the parts, I requested Dr. Peachy to make an examination, which he did. Upon returning to another room, in conference, we determined, of course, that before we could conclude upon the proper mode of conducting the case, it would be necessary to make an ocular inspection of the vagina.

I accordingly placed the lady in a proper position before a window, and first by separating the labia, and by the speculum, explored the parts thoroughly. Near the centre of the *field of the speculum* I found the little mass of the carunculae, and by the introduction of an ordinary silver probe, which met with some resistance, I found an orifice. I then succeeded in gradually introducing an olive-pointed gum-elastic catheter, which was carried above the septum as far as the length of the instrument would permit. I then withdrew the speculum, and passed another catheter into the urethra, leaving the first in situ. Both instruments were pushed in to their full length, and when withdrawn were

covered with "the show," manifesting, as no urine passed through the urethral catheter, that there was an urethro-vaginal fistula, and that both instruments had entered the same cavity. Being still doubtful about the thickness of the septum, and ignorant of the condition of the parts above it and beyond our sight, we concluded that we had recourse to but two modes of effecting delivery, either by a vaginal section or division of the septum, or as a *dernier resort*, the Caesarian operation.

As Mrs. W.'s condition was favorable, though she had been in labor for thirty-six hours, we determined to wait for a time, with the hope that natural delivery would take place. I was led to this determination by my recollection of a case somewhat similar, that occurred in the infirmary of the Medical College of Virginia, under the charge of the late Prof. Bohannon, who thought that possibly it might be necessary to perform the Caesarian section, but determined to delay until he saw what the natural forces would accomplish. After a short time, in that case, the head descended upon the adhesion, which gradually separated, and the termination was favorable to both mother and child.

After a delay of two or three hours, finding that no salutary progress had been made, and, as especially shown by her countenance, that symptoms of exhaustion would soon supervene, we determined that it would be best to make an exploratory incision into the septum, and then, if no contra-indication existed, to extend the incision so as to convert the two cavities into a continuous canal.

After placing the patient in a state of anaesthesia, I put her in the position for the operation of version, and sat in a chair in front of her and between her limbs, and whilst Dr. Peachy separated the vulva, I proceeded to operate. I introduced the index finger of my left hand to the point of the opening, and with a straight probe-pointed bistoury, made a slight incision downwards and backwards towards the rectum.

I am aware that we are advised against making this incision in such cases, lest we might infringe upon the rectum; but the depth of the septum from the point of the incision to the rectum was so great as not to render the cut hazardous. Besides, that portion of the septum at the orifice and surrounding it, was of a dense fibrous structure, and therefore unyielding, while the rest was soft and fleshy, partaking the character of the original tissue.

Hence, had the labor progressed further, the probability is that dilation would not have taken place, but the septum would have been lacerated at its periphery instead of the orifice, and thus injury to the rectum and urethra would have occurred.

I now introduced the index finger of my left hand, and pressing upwards for the purpose of shielding the urethra, and passing the same knife along it, made two horizontal incisions—one to the left and another to the right—and then, by dint of tearing and occasionally cutting in the three directions indicated, I succeeded in removing almost the whole obstruction.

I found, upon passing my finger above the point where the atresia had existed, that the os uteri was fully dilated, the bag of waters formed, and diagnosticated the left occipito anterior iliac position of the vertex. Having removed what we conceived to be the whole difficulty, after rup-



turing the membranes, we determined to leave the case to nature to complete her work, except that, finding the pains were growing feeble, we administered two or three doses of ergot, which accelerated the pains.

In a short time the head descended into the cavity of the pelvis as far as the point of the adhesion, where it remained without much, if any, advancement for about three hours.

During the whole period the foetal circulation could be distinctly heard; and after delaying for the three hours, although we thought it probable that nature would finally accomplish the delivery, yet we deemed it ill-advised to permit parts which had been already subjected to violence by the previous operation, to undergo longer continued pressure, and in order certainly to preserve the child, agreed that the time had arrived when it was proper to resort to artificial delivery, and determined to apply the forceps.

I accordingly again brought the patient to the edge of the bed, and taking the position I had previously assumed, requested Dr. Peachy to prepare and hand me the instruments, and at the proper time to support the perineum. I applied first the left hand blade, which, after being adjusted, was held in position by Dr. Peachy. I then proceeded to adjust the right hand blade, but, when introducing my left hand, in order to guide the blade and protect the soft parts, I found it necessary, upon introducing the blade to the point of atresia, to extend the right incision, which I did, and then easily glided the blade over the right parietal bone to its proper position. The blades were then readily locked.

The head was situated obliquely about the centre of the pelvic cavity. Rotation had not taken place. Consequently, the lock of the blades looked to the mother's left groin.

After making slight traction in order to learn whether any portions of the mother's organs were embraced in the instrument, I proceeded to extract, simultaneously with the pains, and downwards and backwards. As soon as the head reached the floor of the pelvis, and the occiput appeared under the pubic arch, I gradually elevated the handles of the instrument towards the mother's abdomen, and the forehead and face glided over the perineum. The head was delivered without even lacerating the fourchette. I then removed the forceps, but found it necessary to extract the shoulders.

Thus the case was terminated, with safety to the mother and child. It is a male child, vigorous, and largely above the average size. After separating the child, and waiting some fifteen minutes, I proceeded to deliver the placenta, which was effected without difficulty.

I then requested Dr. Peachy to apply the bandage, and after being satisfied there was no danger of hæmorrhage, left the subsequent management of the case to the two estimable and intelligent gentlemen, Drs. Pendleton and Gardner.

I am under many obligations to my friend Dr. Peachy, for the efficient assistance he rendered me in the conduct of this interesting case, and also to the gentlemen who were in attendance.—*Virginia Medical Journal.*

ART. VI.—*On Infantile Thrush.* By Dr. LEBARILLIER, *Physician to the Bordeaux Foundling Hospital.* (Continued from the *Journal de Médecine de Bordeaux*, for February, 1857); translated for the NEW ORLEANS MEDICAL AND SURGICAL JOURNAL. By J. P. BARBOT, Apothecary.

#### SYMPTOMS.

WE have studied the rise and progress of this disease. Let us now examine each of its symptoms in detail.

A. SYMPTOMS FURNISHED BY THE ALIMENTARY CANAL.—The digestive tube presents the most numerous and important symptoms. We will examine them in the following order: 1st, in the mouth; 2d, in the pharynx and œsophagus; 3d, in the stomach and bowels.

1st. The Mouth. Numerous changes take place on the mucous membrane in the mouth of the child, who is about to be attacked by thrush. A very distinctly marked erythematous redness appears thereon two or three days before the first thrush spots are formed; this redness is particularly evident at the tip of the tongue, whereas its base is most often covered with a saburral coat. This redness continues during the whole duration of thrush, and even a long time afterwards; it often spreads over the whole buccal cavity. In those cases which terminated fatally, this redness of the mucous membrane was followed by a manifest pallor of the same. As a symptom always coincident with the preceding, and one which, in connection with it, may serve to diagnose thrush before its appearance, we will mention *the development of the lingual papillæ*. This latter symptom accompanies the former; appears and disappears in the same time. While the mucous membrane is invaded by this erythematous coloration, and the lingual papillæ are being developed, the *temperature* of the mouth is increased, especially if the thrush be *confluent*. In fatal cases this increase of temperature will be followed by coldness.

An important symptom is furnished by the *dryness* of the mouth. In cases of light thrush, and even in mild cases of the confluent type, the mouth continues *moist*. Dryness of the mucous membrane appearing with very confluent thrush, whether associated with enteritis or not, is always a very unfavorable symptom, which must make us fear a speedy fatal termination.

When the thrush is very confluent, and the tongue is, as it were, enveloped in a sheath, the child is very uneasy, takes the breast with difficulty, but often refuses it. This refusal on his part to take the breast is due as much to the tenderness and sensibility produced by the inflammation of the buccal mucous membrane as to the *anorexia* produced by the disease, or the difficulty of swallowing.

I have noticed in two cases, out of about 400, the *ulcerations of the mouth* pointed out by MM. Trousseau and Delpech, on the palatine arch and the borders of the gums. In these two severe cases, the ulcerations were on the palatine arch, in the median line towards the posterior fourth. One of these little patients died. In the other, the ulcers healed as he got well.

I have not met with any cases of *destruction of the epithelium* associated with softening of the mucous membrane. In every case, the mucous membrane appeared healthy after the thrush plates had dropped off. M. Seux, in his numerous researches, has only seen it occasionally. (*Op. cit.*, pp. 79-30.)

We have already shown, in our study of the causes of thrush, the intimate composition of the cryptogamous production, this being the characteristic symptom of this disease. We will now examine its phases of development. Thrush spots always break out the next day after the appearance of the erythematous redness of the buccal mucous membrane and the development of the lingual papillæ. Most generally these white spots first appear on the dorsum linguæ; thence they spread to its tip, to the gums and palate. Thrush rarely appears on the palate first.

When thrush first appears, it has the form of small, white mealy spots. If the thrush continue to be discreet, it will preserve this form; if, on the contrary, it become confluent, these spots will run together, form lenticular plates, and may, in severe cases, form a white membrane, lining the whole buccal cavity. It will be readily understood that, in its different stages, thrush will present different appearances; still these thrush plates drop off and often re-appear two or three times, in some cases, with the same characteristics.

Thrush is almost always white, especially at its outset. Still, I have met with cases in which it exhibited a yellow color. This yellow shade, in cases of confluent thrush of several days' standing, has been attributed to the action of the matter vomited up by the patient. I have met with it in cases in which there was no vomiting, in children of good constitution, and who had no appearance of jaundice. M. Seux attributes it "to the changes produced by atmospheric air on all organic substances accumulating and sojourning in the mouth during the course of the disease." I am willing to adopt this view of the matter, though it does not apply to the exceptional cases mentioned above.

The consistence of thrush is variable. At the outset, it forms a thin, friable body; by degrees new layers are added to the first, and sometimes these altogether acquire considerable thickness. Towards the



close of the disease it diminishes in consistency and thickness. In thrush, preceded by severe enteritis, the cryptogamous production is difficultly formed, and assumes, as I have already stated, a peculiar appearance.

In all cases, these thrush plates *adhere* firmly, and are detached with difficulty. This adhesiveness diminishes as the disease progresses, when these plates drop off in smaller or larger laminae. The cause of this adhesion at the outset has been accounted for in several ways. M. Lélut thinks that "in its origin, thrush exists under the epithelium, whereby it is very adhesive, and that it subsequently breaks through this pellicle, and becomes easily detached." But thrush is developed upon and not under the epithelium.

M. Berg holds "that this adhesiveness is due to the fact, that the thrush and the epithelial cells form a common body together, and that this adhesiveness ceases when new cells, being developed under the old ones, force out the latter and the thrush together." Seux thinks that the mobility of thrush can be more logically explained by the action of atmospheric air thereon, as it progresses in its course. (*Op. cit.*)

2d. Pharynx. Thrush invades the pharynx in the confluent or severe form only; when peculiar phenomena are produced, which are due to the uneasiness resulting from the presence of the cryptogamous production therein. The child refuses the breast constantly, and deglutition becomes almost impossible. This condition is associated with vomiting, or rather frequent regurgitations.

Œsophagus. Most generally when thrush appears in the pharynx, it spreads to the œsophagus also, and is accompanied by the symptoms mentioned above. In either case the disease is severe, and the little patients frequently succumb to it.

3d. Stomach and bowels. When thrush is simple, not confluent, the stomach and bowels do not exhibit any abnormal reaction. In confluent thrush, with or without enteritis, vomiting sometimes supervenes, either at the outset, or at some other period of the disease; it may or may not be followed by diarrhoea. M. Seux has met with this symptom in 27 out of 407 cases of thrush without enteritis, and in 25 cases vomiting occurred in enteritic cases. The matter vomited up was sometimes milk, at other times yellow or green *glaires*. Out of the 380 children in the Bordeaux Almshouse, 24 exhibited this symptom. It occurred 20 times in the enteritic, and always in the confluent form of thrush. These facts would seem to show that vomiting is not an inseparable symptom in thrush. This vomiting must not be confounded with the regurgitations which attend the invasion of the pharynx and œsophagus by thrush.

To what are we to attribute these vomitings? To the confluence of the disease and its presence in the stomach, or to the inflammation produced by it? Valleix thinks that when it is situated far back in the mouth, its presence there brings on vomiting. M. Seux does not concur in this opinion, for he has met with vomiting in cases of discreet or confluent thrush, confined to the tongue or buccal cavity; and in 10 cases of thrush in the pharynx and œsophagus, shown by autopsy, there had been vomiting in three cases only. (Page 86.) He attributes it to sympathetic derangement of the stomach, produced by the disease.

Stools. Except in rare cases, the nature of the stools in simple thrush is not changed; they continue to be homogeneous and yellow. It is only in the confluent form, when there is complication with enteritis, that the stools present any alterations of sufficient importance to be noticed.

Out of 402 children in the Charity *Hospice* of Marseilles, 305 showed no symptom of diarrhœa. In 97 cases there was some; in 19 cases out of these, it appeared in from 1 to 10 days before the thrush; in 23 cases at the same time, and in 55 cases in from 1 to 10 days after it. Its duration varied from 24 hours to several days. (P. 87.)

In the nursing wards (section *d'allaitement*) in the Bordeaux Alms-house, out of 350 children, 280 had no diarrhœa; out of the remaining 97, in 50 cases there was slight diarrhœa; the stools consisted of homogeneous matter, mixed with greenish striæ; sometimes they were green, but never liquid; there were three or four stools a day. In the 47 other cases, there was severe enteritis, and the stools were semi-fluid or watery, of a dirty yellowish or greenish color, and very copious. In two cases they were almost black. The mean duration of this diarrhœa has been from three to four days in ordinary cases; but in the severe form it continued after the disappearance of thrush, and afterwards constituted the main disorder.

It is very rare that this diarrhœa, when free, is not attended with heat and tension of the belly, *météorisme*, and tenderness on pressure. This latter symptom is difficult to be made out in very young children, because of their natural sensibility being increased by the disease. The symptoms are then the same as those in ordinary enteritis, or in *cholericform* enteritis.

B. SYMPTOMS FURNISHED BY THE SKIN.—Erythema, as we have seen while treating of the course of the disease, is one of the symptoms which most frequently attend the thrush formation. In the last 50 cases examined by me, I have met with it 30 times. According to Valleix, it is essentially connected with thrush, which it precedes, almost

always, according to his observations. Erythema generally appears after the diarrhœa, two or three days after the commencement of the disease. It is more or less distinctly marked, according to the greater or lesser intensity of the diarrhœa. If the enteritis be severe, this erythema will cover the nates, the thighs, and sometimes the legs. I consider it as not dependent either on thrush or the diarrhœa. First, it is often found, without thrush, in new-born children. Then thrush sometimes passes off without erythema. We have already pointed this out. Among 402 children, M. Seux did not meet with it more than 181 times.

This erythema may be produced by the contact of urine or fœcal matter on the tender skin of new-born children. At the outset of the disease, it scarcely appears anywhere else but on these parts of the body exposed to these irritating causes.

It assumes three forms : *erythema læve*, *erythema papulatum* and *inter-trigo*. The first is the most common ; its mean duration is from four to six days. I have shown one of the peculiar circumstances in which papular erythema appears in cases of severe confluent thrush. It appears in those cases on the neck and front of the chest, and is generally coincident with an improvement in the symptoms of thrush and enteritis. It has occurred, and has been soon followed by a cure, in 6 cases of thrush with enteritis.

Ulcerations of the heels and malleöli. These also are not due to thrush, since they are to be found in either disease, and are due to the same causes that favor the development of erythema, and to the morbid debility of new-born infants. Valleix, who had noticed it in 20 cases out of 24, attributed to it great importance. M. Seux did not see it more than 29 times in 402 children ; 23 times at the heels, 3 times on the external malleöli, and three times on the forepart of the legs. I have met with but 6 cases in 350, of which four were on the internal malleöli. These ulcerations almost always occur in severe forms of thrush, and particularly in enteritic thrush ; they occur also when there is no diarrhœa, since out of 29 cases seen by M. Seux, 13 occurred in thrush without diarrhœa. The favorite seat of these ulcerations is the heel, at the insertion of the tendo Achillis, or over the internal or external malleölus. The epidermis first becomes red, is then destroyed, and the ulcerations are formed by attacking the dermæ. They vary in size from that of a lentil to that of a large pea ; their appearance is grayish and dull white. When about to get well, they assume a rosy color. Their cicatrization is slow.



C. GENERAL SYMPTOMS.—State of the circulation. The physiological pulse of new-born infants offers so many variations that it is difficult to ascertain thereby if there be any febrile acceleration. Generally speaking, in mild thrush, the pulsations range from 120 to 140, without any increased heat of skin. In confluent thrush with enteritis the mean may be set down at between 140 and 160 pulsations. These conclusions and numerals are also the result of M. Seux's observations. When, on the contrary, thrush is very severe, the pulse becomes small, thread-like, and eventually disappears in two or three days before a fatal termination. The throbbings of the heart, also, are frequent and feeble in the last stage of thrush with enteritis, followed by death.

The child's body has a *very great tendency to become cold*. The acceleration of the pulse is not followed, as in other ages, by a general heat of skin; it is confined to the diseased organ. In thrush, the child's mouth becomes very hot and communicates to the nurse's breast an unusual heat. If thrush be complicated by enteritis, the heat of the belly is also greater than in the normal state. In serious cases, when the circulation is retarded, the skin of the face, as also of the limbs, cools rapidly; the countenance becomes pale and earthy, and a few hours before death the child has a cadaverous appearance.

If the thrush be simple, or confluent without enteritis, the child does not lose strength or flesh. But, should the disease be prolonged, deglutition becomes difficult and the diarrhœa become obstinate, the loss of flesh will be rapid and general, and the prostration of strength will be extreme; the child's motions will be very feeble, and he will emit faint, plaintive cries, which, a little later, will no more be distinct.

Complications. Almost always thrush, either simple or with enteritis, exhibits the symptoms peculiar to that disease without extraneous complications. The complications that I have noticed seem to me to be due rather to the age of the child and the period of life at which he has entered the hospital, than to any disease developed under the influence of thrush. In fact, thrush generally appears in the first month after birth; and in Bordeaux the children generally admitted in the nursing wards are from two to eight days old. In every case, when attacked, it is on the third or fourth day after their admission. Well, that is the age at which *icterus* and *purulent ophthalmia* occur, and these are also the diseases which most frequently supervene with thrush.

Icterus of new-born infants may appear before or at the same time with thrush. Its presence does not seem to have any influence, favorable or unfavorable, on the course of the symptoms. I have found it in 27 cases out of 250; in 15 cases it preceded thrush. M. Seux has

seen it in 55 cases out of 402, and in that number it had occurred 11 times only after the appearance of thrush. Icterus is consequently a disease not depending upon thrush, and not connected with it as cause and effect.

The same thing may be said of the purulent ophthalmia, which sometimes is a complication of thrush; (12 times in 250 in Bordeaux, and 34 times in 402 in Marseilles). Purulent ophthalmia is a disease of new-born infants, as is thrush; it is not, therefore, to be wondered at that both should occur at once. In their course they are independent of each other. I have cited a case in point. We should not consider their simultaneous existence as anything but a coincidence. MM. Trousseau and Delpech, and Seux, of Marseilles, have adopted this view of the matter.

Bronchial or pulmonary affections sometimes attend or follow thrush; they then modify the course of the disease and become the most serious disorder. I have seen four cases of pneumonia, three of which terminated fatally.

*Diseases of the skin* seldom complicate thrush. I have noticed the erythema of the nates and the papular erythema of the neck and chest. We sometimes meet with pustules of ecthyema or impetigo (Seux.) I have never had any opportunity of observing the latter.

*Convulsive affections* are rarely produced during thrush. One child only had convulsive movements in the third day of an attack of confluent thrush. He died. M. Seux has seen two cases of convulsions in this disease. I have not met with any cases of *phlegmone*, of which this gentleman has seen five cases.

We see, then, that all those diseases which sometimes complicate thrush have no connection with it, and may be regarded as intercurrent with it.

[To be continued.]

#### ART. VII.—1. *Marriage between Relatives*.—2. *Deafness*.—3. *Spiritualism as a Cause of Insanity*.

1. *Marriage of Blood Relations*.—Dr. J. S. Athon, Superintendent of the Indiana Hospital for the Insane, in his recent Report to the General Assembly, says :

We have but to look into our own country for a well-rooted prejudice which prevails to a very marked extent against the intermarriage of cousins. The prejudice does not arise from the *fact* of the *marriage of cousins*, but from the *fact* that mental and physical deformities and eccentricities

are far more commonly found in the progeny of cousins than in intermarriage where the parties are unconnected by blood relation. There are, to be sure, prominent exceptions to the charge, but they are mere exceptions, and the other side of the question is the rule. In many parts of Europe long and accumulated prejudices exist among the people against the marriage of first cousins. The reasons are not asked, but *living* monuments are pointed out as sufficient for a rational people to avoid. So far as our knowledge extends, the Catholic is the only church which positively interdicts the marriage of first cousins. Other religious denominations have mooted the question, but, so far as we are informed, have never settled upon anything definite. The impression, however, has been left that an evil was to be found somewhere in the intermarriage of blood relations.

We have but to point to the different caste found in Africa and the South Sea Islands, for examples to illustrate the destructive effects of the intermarriage of blood relations. The Indians of our own continent afford another very striking argument against such connections. All these people are remarkable for bodily and intellectual inferiorities. The muscular system is wanting in size, in power and in symmetry. Many of the African clans have married in and in, until the present generation of some of them might very well be excused of blasphemy if they should claim having been made in the image of the Devil instead of the Almighty. Their intellectual and moral qualities are lamentably vitiated by the same process. Wherever you find in any of those countries an offspring of the negro and one of any other nation, the superiority is at once noticeable, both in physical and mental strength, neither parent being equal to their offspring. The Samboes of South America, the progeny of the Negro and Indian, are far superior in personal beauty, muscular power and intellect, to their progenitors of either side, and without the least disposition to advocate the horrible doctrine of amalgamation, we may refer you every day to examples illustrative of the doctrine that the intermarriage of races improves one or the other. The intermarriage of the Caucasian with other races, doubtless, gives to the United States their prominence in the world for energy and progressiveness. Were it not for this commingling of the various races in intermarriage, as exhibited in almost every domicile in the country, we would not now be characterized "the freest people in the world." We might extend this subject almost indefinitely, but the character of a report would lose its identity in an effort to write an essay on intermarriage.

2. *Marriage between Relatives Considered as a Cause of Congenital Deafness.\** Read before the Academy of Medicine, by M. MENIERE, Fellow of the Faculty, Physician of the Imperial Institute for the Deaf and Dumb.—Invincible arguments exist to support the following proposition: *Man, or rather the human species, deteriorates under certain appreciable conditions.* All the world feels that this is true; the history of all ages and of all countries is full of facts which are of public notoriety; all have seen and known of races of men degenerated, debased;

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\* Translated from *Gaz. Medicale de Paris. Am. Jour. of Insanity, Jan., 1857.*



of families becoming extinct ; and science cannot answer, at the present time, the question, to what causes these public and private calamities are to be attributed.

The influence of climate has been more generally cited than any other, because it involves not only the physical but the moral nature, the diet and the education, the form of government, and all that constitutes the organization of society.

Let us, however, abandon these speculations, in order to come simply to the statement of certain facts, adequate to furnish legitimate argument ; let us examine the statistics of authenticated documents, and find, for example, what countries in Europe contain the largest number of deaf and dumb. Since the commencement of this century, the greater part of the governments, stimulated by the zeal of some generous souls, and at last by public opinion, have sought out calamities in order to afford relief ; they have made an inventory, as it were, in this particular ; and, by successive examinations, the number of deaf and dumb in each of the central States of the Old World has been ascertained. Official statements have been published in various works. I have indicated some of the principal results in a book printed more than fifteen years ago, and I may add, that since that period they have not sensibly altered.

One general fact is apparent from these documents—the number of deaf and dumb vary much in each country : sometimes there are one in every three thousand inhabitants, sometimes one in two thousand, and in certain localities one in two hundred, and even more. These great differences can not be attributed to the inaccuracy of official statements ; only want of precision in determining the infirmity can be taken into account. Very often idiots are confounded with the deaf and dumb, but this cause of error is not sufficiently great to vitiate the results of approximate statistics.

If there are countries where there are ten times more deaf and dumb than others, it is impossible not to believe that there exists some local causes capable of producing such a result. Now, these regions so sadly circumstanced are those also which contain the greater number of cretins—those in which the human race manifests the characteristics of the most profound deterioration. Let us endeavor, then, to reach the true source of this public calamity. The average duration of life is not the same in all the countries of Europe. If it attains thirty-eight and forty years among the most hardy nations, and the best provided with all the necessities of existence, it falls to thirty and to twenty-eight in countries less favored in this respect. There, also, the greater number of children die in infancy ; there, also, youth is less rich in healthy subjects ; and among the adults the number of individuals fit for military service diminish in a considerable proportion. Wherever there are many cretins, wherever the children commonly die before the fourth year, wherever the cases of exemption among the conscripts are numerous in consequence of infirmities, it is there also that we can count the largest number of deaf and dumb. It is impossible to avoid establishing a connection between these facts ; they are harmonious ; they are all the expressions of a like condition—namely, the deterioration of the species, the diminution of the vitality of individuals.

We thus reach the culminating point of this most important question—the determination of the general causes which exercise an unfavorable influence upon the human organism. Among these causes is one which plays a prominent part ; it is in some measure recognized by all the world ; it forms one of those traditional ideas which time consecrates, which certain laws confirm, which everybody accepts, and which, nevertheless, are not clearly enough defined to give rise to official prescription. I speak of marriage between relatives—consanguinity between husband and wife.

It would not be difficult to discover, in the most ancient, literary, or religious records of nations, traces of this idea. Former legislators have given rules for the civil constitution of families, and these ordinances are founded upon the consideration of the evils which result from the union of individuals springing from the same origin. The crossing of races is the natural consequence of these practical views ; and it must have entered, gradually, into the intelligence of nations, that to intermarry with strangers was a guaranty of the preservation of the human species. But between these vague beliefs and a law there is a wide difference ; and it became necessary to place this rule under the protection of Christianity, in order to insure for it all the development of which it was susceptible.

During a long succession of centuries, marriage was absolutely interdicted between all persons related in any degree whatever ; the church alone reserving the right to infringe the rule she herself imposed, in rare instances, the value of which she could appreciate. But these vigorous measures were subject, like many other things, to deplorable relaxations, and at this time all trace of these interdictions has disappeared. If ecclesiastical dispensations are still solicited, it is very well understood that there no longer exist any invalidating circumstances, that civil marriage out of respect for individual liberty is authorized to all degrees of consanguinity, and that, with the single exception of his mother or sister, a man may marry whom he will. Religious law must follow the civil law—it bestows the consecration necessary to an act already accomplished ; and whatever difficulties it opposes to this union, it must ratify what the civil state has permitted. The consequences of this liberty are deplorable—more deplorable than would be believed, for it is easily demonstrated that here is to be found the principal cause for the deterioration of races. Experience has abundantly proved, that in the work of the reproduction of living beings, whatever place in the scale of nature they may occupy, there are useful conditions which favor the result, insure the vitality of the productions, not only for the present, but the future ; for the duration of the species is guaranteed in proportion to the perfection of the individual. Do we not know that in agriculture all the vegetables we plant and cultivate are subject to laws based upon centuries of experience ? Is it not the same in domestic economy for the reproduction of all animals useful to man, and do we not obey, in these cases, habits which establish the absolute value of the crossing of the races ?

We cannot deny the analogy of functions between all living beings. It is not necessary to be a great physiologist in order to comprehend

that wheat, hemp, maize, all alimentary and textile plants, etc., deteriorate when their seeds are not renewed, and their distribution varied. The most common experience demonstrates that in the animal races the productions, to be healthy, should be the result of the introduction among the herd of foreign blood. Now, why should it not be the same in the human family? If our pride shrinks from such comparisons, we must, nevertheless, submit to them, for they are necessary, and the title of nobility inscribed upon our foreheads does not destroy the tie of parentage which connects us with the rest of creation. Thus man is subjected to the same fatal law which imposes upon all living beings; he can continue in time and space only by the aid of usages which he has in common with all who breathe; and the law of general preservation is for him as for others—the crossing of races, the renewal of the vital agencies.

Those who live in flagrant contradiction to these universal rules will, sooner or later, feel the punishment of their faults, and suffer the disastrous consequences of a practice in opposition to the precepts of experience. Marriage between blood relations is nowhere of such frequent occurrence as in the localities where are born the greatest number of deaf and dumb. I have before described certain valleys of the canton of Berne, the inhabitants of which, collected in masses, and living almost without any means of communication with neighboring countries, offer all the conditions favorable to these unions between relatives. There the men marry very young, in order to avoid the troubles and cares of a celibacy without compensation. They marry their cousins, and all the families have been allied for a long time. The children of two brothers, of a brother and of a sister, marry as a matter of expediency, and thus preserve the inheritance intact; consequently, the new family is founded in physical conditions than which nothing could be more injurious. It is in the midst of these isolated populations that we find, in all its hideousness, the degradation of the species, the corruption of the race. There reign cretinism, idiocy, and congenital deafness, to such a degree that the demonstration of the fact I have advanced blazes forth with all its brilliancy. The experiment has been made a long time; it is practised among the masses; the consequences which flow from it are as clear as they are afflicting; and, finally, it would be to reject all evidence not to recognize in these results the condemnation of such abominable customs.

That marriage between relatives is one cause of the deterioration of the species is certain; but it may be asked, How can congenital deafness be considered as a proof of the degeneration of the offspring of these unions? I do not pretend to clear up all these mysteries, only it may be said, as a general rule, that the nervous system, which holds the first rank in the human organization, is also that which suffers the most serious injuries: shortness of stature, slowness and imperfection of development, infancy prolonged far beyond its ordinary limits, as M. le docteur Baillarger has so fully proved, and, finally, obtuseness of the senses, and more particularly feebleness, or even want, of hearing, are the disasters which are to be observed in the brain and its dependencies. It is man reduced to a merely negative condition, manifesting only rudi-



mentary traces of intelligence, a sorrowful object of disgust to all except to the unextinguishable tenderness of maternal instinct.

If we are reproached with coloring too highly the features of this picture—of attributing to a single cause this degraded organism, while it may be the result of a rare combination of exceptional circumstances; it would be easy to prove that it is in nothing exaggerated, and that the practice of marriage between blood relations is the most important of those which can be invoked in such a case. There exist, in truth, families who, living in the midst of luxury and abundance, watched over with the most enlightened care, offer, nevertheless, the sad spectacle of these infirmities of body and mind. These families, instead of seeking a new element adequate to revivify their exhausted organisms by making foreign alliances, obstinately persist in contracting marriages with branches issuing from the same trunk, perpetually contract the circle instead of enlarging it, concentrating in these intimate unions the double influence of an origin already debilitated, and suffer the laws of degeneration imposed upon all those who walk in this path of perdition. If, in the confined and isolated localities I have mentioned, a man marries his own cousin; if the uncle marries his niece, because the scarcity of matrimonial elements renders the thing necessary, other considerations dictate the same practice among those especially who occupy the most elevated stations in the social scale. Royal families, environed by motives of policy, subjected to the exigencies of government, or restrained by incentives of a different order—as the dominant religion of the people over whom they hold sway—can only select their alliances within a very narrow circle; and thus, in spite of the best-directed care, the royal races become enfeebled under the fatal influence of these intermarriages among themselves. Some of these unions remain absolutely sterile; others produce miserable offspring, destined to premature death; the intellect is weakened, or imbecility reveals itself, and even idiocy pierces through all the privacy of a respected seclusion; and the people, who willingly believe that all the miseries of life are reserved for them, see with secret contentment that the throne is not exempted from the most cruel sorrows, and that all the happy privileges are not the portion of those who are the sovereigns of the world.

The history of all ages contains terrible lessons of this kind; it is not necessary to recall them; whoever will reflect upon this subject will find in his memory many celebrated examples to the support of this argument, and will rest convinced that in marriage there exist natural incompatibilities, and that, in transgressing the law of dispersion of races, the lessening, and even the destruction, of the species is involved.

In stating thus distinctly this precept of public hygiene, we have for an end the prevention of the development of one of the most deplorable infirmities; we would wish to exhaust at its source the cause of these organic deteriorations, whose secret reveals itself to the attentive observer. Pathological anatomy of the nervous system, with whatever care it may be exercised, does not always show the lesion which determines congenital deafness; but, in taking counsel from experience, we may destroy one of the most prolific causes of this organic imperfection, and we may diminish the number of those unfortunates to whom the

most enlightened and conscientious medical science has not hitherto been able to afford the slightest relief. We prevent formidable evils, which would be better still than to cure them ; and, finally, families would have no longer to deplore the existence of these imperfect creatures, who will rise up in judgment against the improvidence of their authors.

3. *Spiritualism as a Cause of Insanity in the United States.*—The American Journal of the Medical Sciences for April, 1857, contains a review of American Hospitals for the Insane, written, it is believed, by Dr. Pliny Earle, a competent authority in this department of medicine, showing that, "from 1830 to 1855, the number of patients received at our hospitals for the insane increased *more than thirteen hundred per cent.*" In the first year of this period the number was 628—in the last, 4338.

The official Annual Report of the Indiana Hospital for the Insane, for 1856, shows, among the probable causes of insanity in 1080 cases, that religious excitement caused 86 cases, Spiritual Rapping 35, Millerism 2, Mesmerism 2, etc. Now, upon deducting 108 cases, whose antecedents remained unknown, fanaticism is chargeable with from one-seventh to one-eighth of the whole. "Physical disease" in this list is assigned as the cause in 90 cases.

The Superintendent of this institution, JAMES S. ATHON, M. D., the writer of the report, says :

While the Gospel affords, in its correct application, a balm for every wound, a refuge for the weary and disappointed in every condition of life, there is, notwithstanding, a tendency in this age to engage in polemics - to run off after the incomprehensible, the non-essentials, and thus the excitable and wonder-seeking part of mankind mire in the slough of fancy, the mere offshoot of an over-stretched and too irritable imagination. It is not the Gospel that produces insanity, but it is the unnatural excitement of an *ism* breaking over the boundaries of the proprieties of decency in its enforcement, and thus hurling reason from her throne, that too confidently boasts of its number of insane. So with the arts and sciences, while pursued in their legitimate ways, and by individuals who have been accustomed to much thought, there is no danger ; but whenever the brilliancy of a new discovery falls upon the mind unaccustomed to reading and systematic thinking, the imagination takes wings and soars into regions created by its own omnipotent power, there too often to remain unapproachable by reason or any appliances of man. The improvements of the age have added greatly to the number of insane ; and while money and luxury are the paramount objects to be gained, the mind will be overtaxed and overexcited, the body will be overworked and corrupted by alcohol, tobacco and other stimulants, and, as a finale, insanity comes in and takes possession of the wreck and delivers it over to frightful delusions, and not unfrequently to death.

The overwrought religious, political, and other kindred subjects, which are entertained and propagated by the ignorant, ardent and fa-

natical, has surely done much, aye, too much, to increase the number of insane.

The Report of the Pennsylvania Hospital for the Insane, for the year 1856, by THOMAS S. KIRKBRIDE, M. D., Physician to the Institution, published by the Board of Managers, states that :

‘ Millerism,’ in its day, sent many victims to most of our hospitals, and what is now called ‘ spiritual investigations ’ is a not less prolific cause of the disease. In reference to this last, no impartial person who reads the records or sees the cases that enter institutions for the insane can doubt but that, with many excellent and honest minded persons, the pursuit of these ‘ investigations ’—whatever else may result from them—does seriously involve the mental integrity, and that it may be again, as it already has been in many cases received here, destructive of the happiness of whole families, the ruin of bright prospects, and subjecting the sufferers to a long period of distressing disease, if not of hopeless insanity.—25-6.

In the Report of the State Lunatic Asylum of Missouri, for the years 1855 and 1856, the Superintendent, T. R. H. Smith, M. D., enumerates the probable causes of insanity among 304 patients, (excepting 77 unknown cases,) religious excitement giving 18, and spiritual rappings 6, of the residue.

#### ART. VIII.—*Palæontology. Geology. Ethnology.*

UNDER these heads, it is proposed to collect from different sources a few observations in this number of the Journal, hoping the critical reader will allow them to be mustered with the articles on the Progress of Medicine. These subjects have a collateral relation to the medical sciences, and are much studied by not a few medical men. The original title of this Journal included not only “ Medicine,” but “ The Collateral Sciences,” in its scope and aim. It is believed that the readers of this Journal will not disapprove of the attempt to give variety to its pages, so far as may be consistent with its fundamental purpose, which is utility.

Professors L. Agassiz and A. A. Gould, in their work on Zoölogy truly say : “ To study the succession of animals in time, and their distribution in space, is to become acquainted with the ideas of God himself. Now, if the succession of created beings on the surface of the globe is the realization of an infinitely wise plan, it follows that there must be a necessary relation between the races of animals and the epoch



at which they appear. It is necessary, therefore, in order to comprehend the Creation, that we combine the study of extinct species with that of those now living, since one is the natural complement of the other. A system of Zoölogy will consequently be true, in proportion as it corresponds with the order of succession among animals."

*Geology and Palæontology of the Mississippi Valley.*

The last thoughts of the lamented Dr. Drake were concentrated on his great work on the Valley of the Mississippi, the second volume of which he did not live to complete and publish. In his first volume he gives the following brief yet graphic geological outline. "If we begin, as in the study of our physical geography, at the Gulf of Mexico, and pass up the Valley along its synclinal axis, we shall find the different rocks successively crop out, each to constitute the surface for a certain space, and then to be succeeded by a deeper, which has emerged from beneath it. We shall also find that we pass progressively from the newest to the oldest, though all the formations which lie between these extremes, in all countries may not be met with. Thus around the Gulf of Mexico, we begin on broad and deep alluvial deposits; then rise on diluvial or post tertiary, and then on tertiary. To those in Southern Alabama and Mississippi succeeds a cretaceous deposit, extending into West Tennessee, followed by the coal formations of Illinois and Missouri; then, advancing, we arrive in northern Illinois and Wisconsin, upon the Devonian shales and sandstones which underlie the coal basin; then upon the Silurian or transition limestones, sandstones and slates, and lastly, upon granite and other primitive rocks. In no other country, over an equal area, is the geological structure so simple and uniform: in no other country does it so decidedly constitute the whole into one natural region."

The late Dr. Warren, in his magnificent quarto work on the *Mastodon Giganteus*, published shortly before his lamented death, quotes the following summary from the Report of the British Association for the Advancement of Science, concerning the age of the delta of the Mississippi, the data of which are far less certain than others which could be produced in this behalf, did space permit: "The whole period during which the Mississippi has transported its earthy burden to the ocean, though perhaps far exceeding a hundred thousand years, must be insignificant in a geological point of view, since the bluffs or cliffs bounding the great valley, (and therefore older in date) and which are from 50 to 250 feet in perpendicular height, consist in a great part of loam, containing land," (sand) "fluvial, and lacustrine shells of species still inhabiting the same country. These fossil shells, occurring in a

deposit resembling loess of the Rhine, are associated with the bones of the Mastodon, elephant, tapir, mylodon, and other megatheroid animals; also a species of horse, ox, and other mammalia, most of them of extinct species. The *loam* rests, at Vicksburg and other places, on eocene or lower tertiary strata, which, in their turn, repose on cretaceous rocks. A section from Vicksburg to Darien, through the States of Mississippi, Alabama and Georgia, exhibits this superposition, as well as that of the cretaceous strata on carboniferous rocks at Tuscaloosa. Sir Charles Lyell ascertained, that the huge fossil cetacean, named *Zeuglodon* by Owen, is confined to the eocene deposits. In the cretaceous strata, the remains of the *Mososaurus* and other reptiles occur without any cetacea."

### Palæontology.

Does the science of Palæontology sustain the doctrine of the progressive development of animal organization from the lower to the higher and more perfect types? or does it prove the contrary, namely, a tendency to animal degradation, and even extinction? The former was answered in the affirmative by Lamarek, and was reiterated throughout the work called "*The Vestiges of Creation.*" The latter was answered in the affirmative by an ingenious and still later authority, some of whose curious views (without giving any opinion as to their validity) will be given below. Palæontology, as it respects the ancient colossal flora whence the coal-fields originated, might serve to strengthen the argument based on the fossiliferous anatomy of the ancient fauna and its wonders.

The late Hugh Miller, of Scotland, whose tragical death a few weeks ago, produced an extraordinary sensation of regret throughout the civilized world, entertained and advocated, in opposition to the naturalist, Lamarek, the doctrine of "*progressive degradation among animals,*" which is not altogether fanciful in its application to some varieties of the animal kingdom especially to some extinct species.

Mr. Miller, originally a stone-mason, became one of the greatest geologists of his century. In reference to his discovery of unknown fossil fishes in the Old Red Sand Stone, of the highest antiquity, several distinguished geologists, at a meeting of the British Association, expressed admiration and astonishment. His style makes the rocks poetical objects. The late Dr. Buckland said, he had "never been so much astonished in his life by the powers of any man as he had been by the geological descriptions of Mr. Miller. That wonderful man had described these objects with a facility which made him ashamed of the comparative meagreness and poverty of his own description in the

‘Bridgewater Treatise.’ He (Dr. B.) would give his left hand to possess such powers of description as this man.”

As a sequel to the preceding, and as a prelude to the following observations, a few condensed analytic extracts from Mr. Miller, mostly in his own words, may be deemed curious, if not conclusive. He says, “*The principle of degradation really exists.*” He offers what he regards as conclusive evidence in favor of this principle, derived from geologic history, as written in the rocks. Homological symmetry in the animal kingdom was replaced, according to him, by monstrosities of three kinds, namely: *defect of parts*; *redundancy of parts*; *displacement of parts*. The latter he finds in the *Ichthyos* of the Old Red Sandstone, etc.

“There was a time in which the Ichthyic form constituted the highest example of life; but the seas during that period did not swarm with fish of a degraded type. There was, in like manner, a time, when all the carnivora and all the herbivorous quadrupeds were represented by reptiles; but there are no such magnificent reptiles on earth now as reigned over it then. There was an after-time, when birds seem to have been the sole representatives of warm-blooded animals: but we find, from the prints of their feet left in sandstone, that the tallest men might have

‘Walked under their huge legs and peeped about.’

“Further, there was an age when the quadrupedal mammals were the magnates of the creation; but it was an age in which the sagacious elephant, now extinct, save in the comparatively small Asiatic and African circles, and restricted to two species, was the inhabitant of every country of the Old World, from its southern extremity to the frozen shores of the northern ocean; and when vast herds of a closely allied and equally colossal genus occupied its place in the New. And now, in the times of the high-placed human destiny—of those formally delegated monarchs of creation, whose nature it is to look behind them on the past, and before them, with mingled fear and hope, upon the future—do we not as certainly see the elements of a state of ever-sinking degradation, which is to exist forever, as of a state of ever-increasing perfectibility, to which there is to be no end? Nay, of a higher race, of which we know but little; this much we at least know that they long since separated into two great classes—that of the ‘elect angels,’ and of ‘angels that kept not their first estate.’ Even man is a lapsed race.”

This author contends for a distinct and separate creations, as proved by the fossil flora and fauna, the different classes of which were separated by enormous intervals of time; that these, so far from having been developed gradually from the lowest to the highest forms, came upon



the theatre of existence completely organized, fully developed, altogether mature, possessing gigantic size. This era of perfection was followed by that of monstrosity, imperfection and displacement of parts, and, finally, by degradation, and even extinction. Higher classes, in like perfection, were created as the globe became adapted to the conditions of their existence. These, like preceding dynasties, passed on through the cycle of degradation; symmetry faded, necks were shortened or disappeared; limbs were stuck on the back near the head.

Ages rolled on; limbs, hands, feet gone—a monster alone remained. Countless centuries waste themselves upon a fish tail, as in the Old Red Sandstone, degrading its symmetry, anatomy and primitive perfection, as compared with its more ancient editions stereotyped in the earlier Silurian formation. Osteology, brain and organs, retrograde in the Ichthyic and other classes of fossiliferous animals of eras more recent. With the close of the Palæozoic æra, the degeneration becomes more marked. In the Old Red Sandstone æra the fishes had greatly retrograded in symmetry; in the genera *Coccosteus* and *Pterichthys* we find the first example of degradation, through defect. In the *Pterichthys* the hinder limbs seem wanting; and in the *Coccosteus* we find no trace of the forelimbs.

Ages and centuries pass, and long, unreckoned periods come to a close; and then, after the termination of the Palæozoic period, we see that change taking place in the form of the ichthyic tail, singularly illustrative of the progress of degradation. Yet other ages pass away, and then we find yet another remarkable monstrosity of displacement introduced among all the fishes of one very numerous order, and among no inconsiderable proportion of the fishes of another; the Ctenoids, (*Acanthopterygii*), and in those of the Cycloids, (*Malacopterygii subbrachiati*), the hinder limbs are brought forward and stuck on to the base of the previously misplaced forelimbs. All the four limbs, by a strange monstrosity of displacement, are crowded into the place of the extinguished neck. And such, at the present day, is the prevalent type among fishes. Monstrosity through defect is also found to increase, so that the snail-like *apoda*, or feet-wanting fishes, form a numerous order, some of whose genera are devoid, as in the common eels and the congers, of only the hinder limbs, while, in others, as in the genera *Muraena* and *synbranchus*, both hinder and fore limbs are wanting.

In the class of fishes, as fishes now exist, we find many more evidences of the monstrosity which results from both the misplacement and defect of parts.

The monstrosities did not appear early but late. The progress of

the race, as a whole, though it still retains not a few of the higher forms, has been a progress, not of development from the low to the high, but of degradation from the high to the low.

Mr. M. instances in the flounder, plaice, halibut or turbot, an example of the degradation of distortion superadded to that of displacement. "The creature [the flounder,] is twisted half round and laid on its side; one-half of its features had to be twisted to the other side, and the other half to the other—one well-marked eye-orbit opening, like that of Polyphemus, direct in the middle of the fore part of its head; while the other, external to the cranium altogether, we find placed among the free bones, directly over the maxillaries; wry mouth; squint eyes; one jaw short, nearly straight, the other larger, narrower, bent like a bow; in the one 4 to 6 teeth; in the other, 30 to 35."

Mr. Miller's standard of elevation, and, of degradation as well, is founded on the development of the brain. Even Caliban, the monster, is, according to Shakspeare, afraid that "the principle of degradation" shall transform his forehead. He says:

"We'll all be turned to barnacles, or apes,  
With foreheads villainous low."

Nature, says Mr. Miller, in constructing the brain, "first lays down a grooved cord, as the carpenter lays down the keel of his vessel; and on this narrow base the perfect brain, as month after month passes by, is gradually built up, like the vessel from the keel. The brain thus built up of all the types of *brain*, may be the organ of mind compounded, if I may so express myself of all the varieties of *mind*."

"It was a bold saying of the old philosophic heathen, that 'God is the soul of brutes'; but writers on instinct, in even our own times, have said less warrantable things. God *does* seem to do for many of the inferior animals of the lower divisions, which, though devoid of brain and vertebral column, are yet skilful chemists and accomplished architects and mathematicians, what he enables man, through the exercise of the reasoning faculty, to do for himself; and the ancient philosopher meant no more."

*Mammoth Teeth.* By Dr. J. E. THOMPSON, of Butler, Mo.—In the year 1840, a quarry of mammoth teeth, tusks, jawbones, in fact all the anatomical parts of some mammoth monster, which no historian or geologist has ever yet as gave an account of, was found on the Osage river, near Pomme de Terre, about four miles southwest of the city of Warsaw, Mo. These famous curiosities have excited not only the attention of America but also that of Europe.

In the same year a skeleton of enormous size was dug from this same quarry by Dr. Koch, of St. Louis, measuring over seventeen feet in

height and forty feet in length ; its tusks were from ten to fifteen feet long, and many of the teeth weighing over twelve pounds. When the bones of this skeleton were properly placed, there was sufficient room to comfortably seat a large band of music around a large table within its ribs. This skeleton was sold to her Royal Majesty of England for the enormous sum of \$40,000, and placed in the Royal Museum, at London, for exhibition.

In December, 1856, Isaac Wickliffe, Esq., found a new quarry of mammoth bones on his farm, three miles southwest of Warsaw. A number of these teeth, etc., were bought by myself. The largest tooth in my possession weighs 7 lbs. 10 oz.; the masticating surface in its longest diameter measures ten inches, and four inches in its shortest diameter ; the length of the body of the tooth is six inches ; the tooth has three roots corresponding with the roots of the molars of man. The longest root—one of the buccal roots—is nine inches. The masticating surface of the tooth is covered by a very thick enamel of a milk whiteness, surmounted by eight cusps one inch and a half in length, with as many corresponding depressions, arranged in such a manner that the tubercles of the upper jaw are adapted to the depressions of the lower, and *vice versa*. This tooth corresponds with the *dens sapientiæ*, or wisdom tooth, of the upper jaw.

I also have the point of a tusk—except eight inches of the point, which is broken off—twenty-six inches in length, with a diameter of four inches at the base, and about two at the point, of a curved shape. The tusk of which this is a part was between nine and ten feet long and twenty inches at the base. I could with ease stick my head into the nerve cavity at the base. This tusk, however, was so badly decayed, from being so near the surface of the earth, that only this piece could be saved by means of a coat of hot glue. These bones were found about five feet beneath the surface of the earth, in a flat, swampy piece of land. The water in these places is permanent, of an alkaline character, and will not freeze in the coldest weather.

Now the question is, When did these monsters live, and of what species are they ? There is no doubt that they lived since the flood, from the fact that their bones are found apparently in the spot where their carcasses decayed. Of what class they are is hard to tell ; but from the teeth we might judge they were herbiferous. There is a tradition among the Aborigines that these animals caused the prairies by destroying the timber of the forests.

My opinion is, that the elephant of the present day is a degenerate species of these same monsters ; for we have the same reasons to believe that beasts grow weaker and diminutive in size, that we have to believe that man does. Some suppose that these animals are what was called by Job the behemoth ; but this is doubtful.—*St. Louis Med. & Surg. Jour.*, March, 1857.

*The Mastodon Giganteus*.—The late distinguished Dr. J. C. Warren, of Boston, in his splendid work on *The Mastodon Giganteus*, (1852) says : “To Cuvier we are indebted for the first elaborate account of



the Mastodon Giganteus. He had not, however, the advantage of a skeleton; nor, in truth, did any exist until the persevering labor of Mr. Peale, of Philadelphia, produced one tolerably complete from the morasses of Orange county, New York, in 1801. Another, less perfect, obtained by the labors of the Peales, existed in the Museum at Baltimore; and the collection being removed, it was taken apart, and now belongs to me. About the year 1840, Mr. Koch obtained a skeleton and a rich collection of bones from the banks of the Missouri, which were mounted under the direction of Professor Owen, and have been deposited in the British Museum."

Dr. W. enumerates, among the only five skeletons known of the Mastodon Giganteus, (all more or less incomplete,) that of Dr. Koch: "The Missourium, so called, taken by Dr. Koch to England, in 1843, reformed and set up in the British Museum, under the direction of Professor Owen, although imperfect in many respects, has been of great use as the only representative of the Mastodon frame in Europe."

Some of these five skeletons are those of Mastodon Calves, though not much higher than elephants, the latter have frames which might be called delicate when compared with the Mastodon."

Teeth—2 on each side of each jaw, making in the whole eight—being 11 inches long; cervical vertebræ, 7; dorsal, 20; lumbar, 3; sacrum, 5 pieces; caudal, 22; height 11 feet; length, face to tail, 17 feet; trunk, 16 feet 5 inches; tail 6 feet 8 inches; proboscis, 10 feet 3 inches; head, from the occipital condyles, in a straight line, to the anterior edge of the tusk-socket, 3 feet 2 inches; tusks, 10 feet 11 inches; depth of socket, 2 feet 3 inches; external length, 8 feet 8 inches.—Pp. 2, 10, 212.

*Petrifications. Letter from Professor Silliman to Dr. Warren on Petrifications.*—Petrification appears to me to arise from a gradual substitution of inorganic for organic matter, the tissue of the latter serving as moulds in which the former is cast by gradual percolation or infiltration, and it becomes firm by cohesion.

"Petrifications being chiefly silicious, or calcareous, or ferruginous, and all these matters being contained in natural waters, may therefore be introduced through their agency. It is very possible that the immense petrified forests—the silicious, I mean—may have been lapified by hot or tepid volcanic waters, holding silicates of alkalis in solution. The sites of such forests may, by subsidence, have been lowered down beneath the waves; and hot waters, charged with silicates, may have continued to flow from a focal point beneath, and thus the trees may have become stone. Calcareous and ferruginous petrifications may be produced in the same manner, with or without the aid of heat. The soft

parts of organic, and especially of animal, bodies are rarely petrified, and, in general, only the firm fabric, such as bones, casts and woody fibre, which appear to be sufficiently persistent to endure for the requisite period of time. Shells, being already chiefly mineral matter, are more rarely changed, except by substitution of inorganic matter for gelatine, or other animal matter, which they contain. Still, instances are not very uncommon of silicified shells, silicified sponges and corals, etc.; and silicious and calcareous casts frequently occupy the interior of shells, thus copying both their form and that of the included animal.

In the living tree cut down, and the amputated end of it immersed in a colored fluid, the extreme twigs and leaves soon show that every part has been penetrated. Coal is not petrified, but altered."

"Col. Wailes, of Washington, near Natchez, has succeeded in bringing back fossil Mastodon bones to a firm and persistent state, simply by immersing them in a strong solution of glue; thus restoring the gelatine which the waters and time had taken away.

The phosphate of lime of bones, being already mineral matter, becomes petrified when the animal matter is removed, and inorganic material substituted. Still, it is possible that the phosphate of lime may itself be removed, as we sometimes find bones silicified, which would require either the removal of the bony matter and the substitution of silex, or the combination of the latter with it.

"Your Mastodon skeleton is not in the least mineralized, but appears to retain its gelatine, which accounts for its firmness."

*The Fossil Genus Basilosaurus* (HARLAN); *Zeuglodon Macrospondylus* (KOCH).

Robert W. Gibbs, M. D., of Columbia, South Carolina, in his learned "*Memoir on the Fossil Genus Basilosaurus*," says: "In 1832, Dr. Harlan described a gigantic vertebra weighing 44lbs., sent to him by Judge Bry from the banks of the Ouachita. Dr. Harlan subsequently procured from the plantation of Judge Creagh, in Clarke county, Alabama, remains of similar vertebræ, and portions of other bones evidently belonging to the same fossil. In 1843, the greater portion of this huge denizen of a former world, was procured from Clark County, Alabama; the vertebræ extend in a line 65 feet.

"I have in my collection a large vertebra which was presented to me by Mr. Cooper, of Claiborne, Alabama, measuring 18 inches in length and 12 in diameter on the articulating surfaces, and although destitute of the processes and somewhat broken, it weighs 65½ lbs. With it I received several portions of ribs."

Mr. T. A. Conrad, in a paper read April 15th, 1834, before the Academy of Natural Sciences of Philadelphia, says, that the saurian vertebrae found by Judge Bry on the Ouachita, had been erroneously supposed to belong to the *eocene* period, but doubtlessly occur only in the *cretaceous* beds. Judge Bry says that "*ammonites* and other *cretaceous* fossils abound in the vicinity."—*Jour. Acad.*, vii, 121.

Sir C. Lyell, as well as Dr. Koch, assigns the place of the *Zeuglodon* to the *eocene* or lower tertiary, and consequently above the *cretaceous* formation.

The *Zeuglodon* found in the *eocene* of Alabama by Dr. A. Koch, which was exhibited in New Orleans in the spring season of 1853, was about 100 feet long. I counted in this skeleton 112 vertebrae, about 70 of which were caudal.

The genuineness of this gigantic skeleton of the *Zeuglodon* of Dr. Koch, exhibited in New Orleans in 1853, and more recently St. Louis, was so generally questioned, that it may not be amiss to reproduce the following documents published in the *St. Louis Republican* in relation to this gigantic fossil found in the South.

*The Zeuglodon—Opinions of Professors Leidy and Silliman in regard to it.*—This is to certify, that in the spring of 1854, on the occasion of attending the Medical Convention held in St. Louis, I seized the opportunity of visiting Mr. Koch's skeleton of the *Basilosaurus* or *Zeuglodon*, then on exhibition in Dr. McDowell's Museum. I was delighted with the view of so fine a specimen of this huge, extinct animal, and felt that science was deeply indebted to the zeal and industry of Mr. Koch for its restoration to the world.

The bones composing the skeleton, I am satisfied, are genuine, and the skeleton itself is as complete as one could possibly be obtained under the circumstances in which the remains were found.

Some of our naturalists have been too hasty in pronouncing Dr. Koch's *Basilosaurus* or *Zeuglodon* skeletons "*Humbugs*," and by so doing, I am sorry to see they discourage Mr. Koch from making other explorations, and thus materially retard the advance of Palaeontological science.

Formerly, Mr. Koch exhibited a similar skeleton to that in Dr. McDowell's Museum, in Philadelphia and Boston. Several naturalists pronounced it a deception; and I was requested, by an eminent gentleman of Boston, to visit and determine its character.

I examined it, and pronounced the skeleton a *bona fide* collection of bones, deeming the materials to hold the fragments of the latter together, perfectly proper and necessary under the circumstances.

The skeleton just mentioned I afterwards saw in the Royal Museum, Berlin, Prussia, and was informed by Prof. John Muller that the King of Prussia had paid for it, if I recollect rightly, 20,000 thalers. I said I thought the price was a high one, and Professor Muller answered, "It is not; I would have given as much had it been in my power."



It is an absurdity to pronounce a skeleton a "humbug" which has its constituent bones held together with plaster, metal or other means. No skeleton of any recent animal is ever artificially mounted without metal, leather, etc., and yet no person considers such a skeleton a "humbug." Even should a skeleton be made up or restored from the bones of a dozen individuals of the same species, it cannot be considered a deception, as it gives a correct knowledge of the skeleton. Further, if one half of a skeleton be restored with plaster casts or carved specimens in wood from the natural half, it is no deception, as the true character of the whole is given.

In confirmation of the two latter statements, Cuvier restored several skeletons of extinct animals from the bones of numerous individuals; and at the present moment there are several skeletons of extinct animals in the British Museum, in which a number of the bones are simply imitations in plaster.

JOSEPH LEIDY, M. D.,

Professor of Anatomy in the University of Pennsylvania and Curator of the Academy of Natural Sciences of Philadelphia.

Philadelphia, April 27, 1855.

TO DR. ALBERT KOCH:

*Dear Sir:* I have perused, with great satisfaction, the able and interesting letter of Joseph Leidy, M. D., dated April 27, 1855, on the subject of the skeleton of the *Zeuglodon*, which I have now had the opportunity to examine again—having also seen that which was exhibited in New York in 1845.

Dr. Leidy's opinion I am happy fully to endorse; it is exactly the expression of my own, and, I add with pleasure, that you have presented to the scientific world, and to all the world, the most valuable addition that has been made to Palæontology since the discovery of the ancient Elephant, the Mastodon and the *Iguanodon*, and its congeners, and the perfect skeletons of the ancient Elephant and of the Mastodon.

You have well deserved the distinguished approbation which you have received in Europe, and which will not be withheld from you in this country.

With my best wishes for your success in any future explorations, I remain, dear sir, your friend and servant,

B. SILLIMAN, Sr.

St. Louis, Mo., November 27, 1855.

#### ETHNOLOGY. CRANIA BRITANNICA.

During the great epidemic of 1853, a letter and the following communication from J. B. Davis, F. S. A., member of the Royal College Surgeons of England, etc., etc., etc., was received, addressed to the present editor of this Journal, "as one interested in ethnological pursuits, and as likely to afford assistance in the publication" of a national work having for its title, *Crania Britannica*, by Drs. Davis and Thurnam:

Amidst an attention to the Natural History of Man, such as has never before existed, embracing the inhabitants of every region and remote island of the globe, it seems an anomaly that the people who first roamed the wilds and forests of our native country should have hitherto

attracted so little regard. There have been many controversies to decide the exact position held by the ancient Britains in the scale of civilization. Antiquaries have appealed to the numerous relics of their arts, and history adduces evidences of their prowess, their patriotic valor, and of their heroic resistance of even Roman conquest. Their remaining works have been traced out and deciphered with the most patient investigation. But it is remarkable that their personal remains—their bones—entombed in Barrows over so many districts of these islands, have, until recently, not been objects of attraction even to collectors; unlike the geologist, who has gathered up and treasured every osteological fragment of the races of animals coming within his domain. And hitherto no publication has been devoted to the chief vestige of the organization of the primitive Briton and his successors, that most important and instructive of all—his cranium. In the skulls themselves, we have the very “heart of heart” of all their remains, which the gnawing “tooth of time and rasure of oblivion” have spared. These present an exact measure of their differing cerebral organization, of their intellect and feelings; and may be said to be impressed with a vivid outline of their very features and expressions.

It is believed that a sufficient number of these precious relics have now been exhumed from Barrows and other Tombs, in which the living hands of their brethren (observing the dictates of eternal love, or the rites of an all pervading superstition, based in inextinguishable aspirations,) deposited them, to enable us not merely to reproduce the most lively and forcible traits of the primeval Celtic hunter or warrior, and his Roman conqueror, succeeded by Saxon or Angle chieftains and settlers, and, later still, by the Vikings of Scandinavia; but also to indicate the peculiarities which marked the different tribes and races who have peopled the diversified regions of the British Islands; and as we thus picture our varied ancestry to deduce, at the same time, their position in the scale of civilization by the tests of accurate representation and admeasurement.

These primitive remains are of great interest, of real national value, and deserve the most careful examination and study, that they may be delineated with the utmost precision—with artistic skill worthy of the subject; and, being thus perpetuated, they will be rescued from the grasp of accidental destruction and the further inroads of fretting age.

In some countries of Europe, collections of Crania, such as are above alluded to, have thrown much light on the history and relations of the early races inhabiting them. The results obtained from researches of this kind in the Scandinavian kingdoms have been presented to the world in the writings of Eschricht, Retzius and Nilsson. In America, the great master of the science, the late Professor Morton, founded his classical works, “*Crania Americana*” and “*Crania Ægyptiaca*,” on the Aborigines of the Western World and on the Ancient Egyptians, upon skulls obtained from the mounds and burial-places of the former, and the catacombs of the land of the Pharaohs. In our own country, as Dr. Pritchard, our best ethnological authority, repeatedly laments, nothing of the kind, except on the most inadequate scale, has yet been attempted. Few countries, however, present greater facilities for an inquiry of this description.

The vast coal fields indicate a gigantic, vigorous and luxuriant vegetation in ancient times, compared with which the existing flora is dwarfed. The carboniferous flora, which was little diversified, does not appear to have included the *exogens*, now reckoned at 60,000, constituting four-fifths of the entire flora. But, with regard to the ancient Zoölogy, the variety, number and extent of its species, palæontological science is but an imperfect representative, seeing that, from the natural history of fossilization, most animals, particularly land animals, must have perished, and have been decomposed, as now, without leaving a trace of their existence in the submerged books of stone. From the remote palæozoic æra of the Silurian and devonian formation up to the most recent, this proposition will, doubtlessly, hold good, both as to the fauna and flora.

The small number of species represented in the fossil flora has, in its bearings upon the natural history or theory of development, a compensating feature in the superior exuberance and size of the ancient vegetation.

The colossal coal plants of the carboniferous æra abounded in the interior valley of the Mississippi. At a later geological period, animal *colossi* luxuriated in the lower valley and upon its littoral, as the *Mastodon Giganteus*, the *Zeuglodon Macrospondylus*, (Dr. Koch,) and other animals, now extinct. The dwarfed plants and animals of modern times, if compared with the ancient, would seem favorable to Miller's doctrine of degradation, which is the antithesis of Lamarck's theory, as set forth in this Journal many years ago, by the present editor, a summary of which may be seen in a review of Solly on the brain, in the July number for 1848. Of the existing fauna, the *eyeless* animals found in the Mammoth Cave of Kentucky afford, perhaps, the only absolute proof, at the present æra of animal degradation. The complete extinction of the eyes in several species is a loss of physiological capital, the import of which has been ignored.

If the fishes, spiders, beetles and other insects, in this cave are, as naturalists say, *eyeless*, would the whole animal kingdom suffer a like degradation from the privation of light? This interrogatory suggests another—have the past changes in the social, civil and educational systems of the world, during the historic period, changed the psychical, physiological or anatomical characteristics of man, whether white, black or red?

As a supplement to the preceding plan, and as containing the latest conclusions arrived at, during the progress of research, the following summary by Mr. Davis lately addressed to and published by the Academy of Natural Sciences of Philadelphia, on the occasion of Mr. Davis's election to membership in that able body, will doubtlessly interest the



readers of the New Orleans Medical and Surgical Journal, and the more so because the natural history of man, including his osteological memorials, types, varieties and *unicité*, constitutes a most important, difficult and controverted investigation, in which many of the greatest minds are now zealously engaged. In this investigation Americans, and particularly the late Dr. Morton, have taken leading position. Morton's *Crania Americana* and *Crania Aegyptiaca* were the first two great light-houses erected upon the coasts of ethnography—the one glimmering upon the aboriginal “field of skulls” in the new world, and the other illuminating the Pharaonic “Golgotha” in the old.

The present, with a zeal and fidelity unknown to the past, will transmit to the future, anatomical data, casts, delineations, measurements, physical and physiological histories of man, his varieties, individualizations, social, civil and climatic influences, by which all succeeding generations may be compared with the past, and, by which, the physical dynamics and certain physiological theories concerning the tendency of the human race to elevation or degradation, indefinite improvement or ultimate extinction, may possibly be determined.

EDITOR N. O. M. & S. JOUR.]

*On the Crania of the Ancient Britons, with Remarks on the People themselves.* BY JOSEPH BARNARD DAVIS. It was the distinguished and excellent Professor Samuel George Morton, who, by his industry, skill and great attainments, mainly developed what may be denominated the science of Comparative Craniology, as applied to ancient and extinct races of men. And we deem it an especial honor to be permitted to address that learned body before which Morton's chief discoveries in this science were first announced—an Academy which had the surpassing advantage of numbering him among its Presidents. But in venturing thus to address the Academy of Natural Sciences of Philadelphia upon a subject congenial to those so admirably illustrated by its late President, and therefore in some measure following in his steps, it must be distinctly announced *in limine*, that it is not with any pretensions whatever to co-equal powers, or co-equal learning.

The ancient Britons, the aboriginal people of the British Isles, are a race of whose physical characters we can learn little or nothing from classical writers, whether Greek or Roman. The very little knowledge to be acquired is only incidental, never direct—imparted, as it were, by accident. They were a people divided into a number of tribes, living chiefly by the chase and the products of the rivers and the sea; yet not devoid of both pastoral and agricultural habits. They are known to us mainly from presenting a serious obstacle for ages to the arms of the conquerors of the world—imperfectly subdued with much difficulty, and only held in subjection by the most consummate stratagems of the military art of the Romans. To account for their first appearance in the Islands, many ingenious and learned theories of immigration have been broached, all of which are exposed to a serious objection, inde-

pendent of failing to suggest any reasonable motive for such primordial migration, viz : that they are based upon a point, instead of a broad and solid foundation—they invert the order of nature, and make use of the result and the superstructure to give the substratum which is required. They all suppose man, in his most primitive and most helpless condition, to have been endowed and furnished with appliances and arts, which are only the result of development and cultivation. And, like the similar fanciful speculations which would derive the Indian tribes of the American continent from the eastern one, are obnoxious to the objection of being gratuitous and superfluous. Their inventors can give no valid reason, based on solid ethnological ground, why the assumed migrations may not have pursued a diametrically opposite course. This being the case, we have a right to maintain, that there is a decided preponderance on either one side or the other, and an equal reason to assume for the primitive inhabitants of the British Islands an aboriginal and primordial character not inferior to that of any other race.

Like most, if not all the primitive people, they have manifested the great principle inherent in the human mind, which incessantly animates an irrepressibly longing hope and aspiration for a future life—one of those elements of man, which more than any other bears irresistible evidence, both of his inherent grandeur and superiority in the animal scale, and also, of the strict unity and identity of his race—they have manifested this noble and sacred sentiment by a scrupulous and elaborate care in preserving the dead ; to whom they even furnish food, objects of adornment, weapons and companions also for the future life they anticipated beyond the tomb. Their tombs, the Cromlechs, Barrows, Cairns of the British Islands, notwithstanding the lapse of twenty, thirty or more centuries, have remained until recent times scattered over the surface of the country in various directions ; and, it is evident, have been constructed with such pains and skill as to have braved all the chances and changes of revolving ages, until the arts of modern agriculture, or the inquisitive hand of man—alas ! almost constantly a rude, uninstructed and ruthless hand—have unheard the remains they have so faithfully preserved.

These remains, which, as Sir Thomas Browne long since said, “have quietly rested under the drums and trampings of three conquests,” are capable of teaching us something of the race to which they have belonged, and of recalling some of those physical features of which it is so unfortunate the ancients left no full, faithful and permanent record, when they had the living people before them. If we might not have expected from the martial spirit of Cæsar an ethnography of the tribes who proved such stubborn obstacles to his ambition and desire of conquest, there were those among his friends, who passed over and remained with him in Britain, who had both the abilities and the opportunities to accomplish this task. The most illustrious of Roman orators, as we learn from his invaluable Epistles, writing to his brother Quintus, who was one of Cæsar’s companions in Britain, and even entertained the design, urges upon him the composition of the work which we must ever lament the want of—a Poem on the geography, the natural history,

the ethnography—"mores et gentes," the nations or tribes, and their manners and customs—as well as the history of the war in which the great Roman general had been engaged with them. It were in vain to lament the want of the curious information this work would have imparted. We are now mainly reduced to the teachings of the tomb, and in the language of M. L'Abbé Cochet, a learned French archæologist, "dans le silence de l'histoire, le tombeau est le meilleur document que l'on puisse consulter pour connaître la vie, les mœurs, et la religion de nos pères."

The eleven fine lithographs of the skulls of the ancient Britons, which I transmit to the Academy with this paper, have been executed from the Crania themselves of the *natural size*, and with the greatest care and fidelity. They are derived from Barrows in parts of England at considerable distances from each other—some from Yorkshire, which was inhabited by the tribe of the *Brigantes* in the time of Ptolemy, about the year 120 of the Christian era,—some from Derbyshire and Staffordshire, the seats of the *Coritani* and *Cornavii* at the same period—one from Gloucestershire, the seat of the *Dobuni*, and others from Wiltshire, the country of the *Atrebatti* in the days of Ptolemy. We cannot affirm that they have actually belonged to individuals of these tribes respectively, as there are many chances which might render this doubtful. Wars, whether intestine or foreign, and migrations, no doubt did their work of mutation in that early time as they have done since ; and there is also the possibility, although very remote, of their having belonged to prisoners, or to guests of neighboring or remote tribes. But in the absence of all evidence to support these suppositions, we cannot err much in appropriating them to the tribes in whose country they were found. At least, there can be no question of their genuine Brittanian origin and derivation. This, as we shall perceive on closer examination, is impressed on every feature, and is now almost as cognizable as in the day in which they were clothed with their fleshly lineaments.

The study of skulls in general teaches us that among all races, although there is a general resemblance running through the series belonging to a given race, yet there are many minor diversities ; and it is probable that among European races these diversities have a wider range than in the other great divisions of the human family. Morton was able to discern among all the numerous American races, exclusive of his hyperborean, a family resemblance. Notwithstanding this position of his, we must admit that the diversities of the cranial forms of the very numerous and diverse tribes of the American continent are both great and frequent ; and an extended study would in all probability develop such resemblances in specific families as would confer upon them a distinct and proper value. Now, among such specific families belonging to European races we believe it is much the same, only that the individual peculiarities in the families diverge further from the tribal type of form, and are probably more frequent. Under these circumstances, we are prepared to expect diversity of form among the crania of the ancient Britons ; but it is not unreasonable also to expect that, true to the beautiful principle of nature, of an endless diversity under a



comprehensive uniformity, this diversity will be restrained within limits, and be subjected to definite rules. We may therefore endeavor to distinguish what may be denominated the typical form of cranium belonging to any race of man, and then to arrange the divergent forms subordinatedly around this.

I. We believe the *typical form of cranium of the ancient Briton* may be regarded as represented by some of the skulls delineated in these lithographs, especially in that from the Barrow on Ballidon Moor in Derbyshire, and that from Green Gate Hill Barrow in Yorkshire, and that from Codford in Wiltshire, plates 1, 3, 4 of the 1st decade of *Crania Britannica*. They are somewhat short or *brachy-cephalic*, not ill-developed, nor remarkable for a small facial angle. The bones of the face, and especially the upper maxillaries are upright, or *orthognathous*, but, also rather short; and they present more than the bones of the calvarium that rugged aspect which is the characteristic of a savage or semi-civilized race. The chin is usually prominent, the external surface of the upper maxillaries depressed, the nose abrupt and short, surmounted with a frowning eminence marking the situation of the frontal sinuses. The teeth are tolerably large and usually well worn. They correspond with the rugged and frequently everted angle of the lower jaw, the spacious zygomatic arch, and the large surface, well marked out by its superior semi-circular line on the sides of the calvarium. These rough and spacious surfaces indicate power in the temporal and masseter muscles, and equally with the condition of the teeth, reveal a people of carnivorous tastes, a people whose delight was in the chase, and the luscious feasts it afforded them.

II. Of the *aberrant forms* of the ancient British skull one is remarkable for its length, and may be denominated *dolicho-cephalic*. To this form there attaches a good deal of interest, from the theories which learned men have been induced to associate with it. An example of this peculiar aberration is afforded by the cranium from the famous chambered Barrow of Uleybury in Gloucestershire, plate 5 of *Cran. Brit.* This skull is remarkable for its length and want of elevation, but it is not particularly distinguished by narrowness. Other examples of the dolicho-cephalic form of the ancient British Cranium are known to the writer, but some of these are quite as much marked by their want of breadth as by their elongation. In fact, they equal in this feature the skulls of that race to which longness and narrowness of cranium are regarded as peculiarly appropriated—the negroes of Africa. It is a singular circumstance that these long skulls of ancient Britons have usually been met with in a particular species of barrow, that which is composed of a series of chambers, arranged it may be in diverse manners—the chambered barrow. In the anxious inquiries in which the mind is apt to indulge when prying into the almost impenetrable obscurity of a very remote past, every special circumstance fixes the attention and acquires importance. And the discoveries we have mentioned have led to the theory that these long crania have belonged to a particular precedent race of people, a people who interred their dead in a more elaborate and complex manner than the race which succeeded them; a race of people which have been distinguished by the denomination of *pre-Celtic*.

In the opinion of the writer the evidence is much too incomplete for any such inference as this, were it not equally obnoxious to the objection mentioned in the early part of our remarks—that of a certain inversion in the order of sequence—by representing the complex barrow builders as preceding those who raised simple barrows, which is contrary to all experience. There are good archæological reasons, it is true, for believing that the chambered Barrows of Great Britain belong to what is denominated “the stone period,” and that they are very early, but that the builders of them can with any good confidence be referred to the earliest portion of the stone period, seems to us to want probability as much as it wants conclusive evidence for its support. The circumstance that these long skulls have usually been found in chambered Barrows may be a mere contingency, little more than accidental, and further inquiry may not improbably prove this. For it must not be supposed that the skulls of ancient Britons are numerous, or have often been saved from the wreck of their primeval sepulchres, and especially that many of the dolicho-cephalic crania from barrows of a chambered character have been met with. Strangers to the facts of the case might have supposed both these things to be true, but indeed they are far from being so. Specimens of crania of ancient Britons are rare objects, those in anything like a perfect state, very rare, and all specimens are becoming rarer every day. British barrows have been undergoing destruction for ages, having been the prey of idle curiosity or cupidity always, and the skulls of those once so sacredly enhearsed in them by the tender hands of mourning friends and relations, have always been especially exposed to destruction, possibly from the feeling of ignorant terror, which is so apt to diverge into ferocity and destructiveness. But whatever be the cause, the fact receives daily confirmation that when ancient tombs are accidentally opened by uninstructed and unscientific persons, the relics are plundered and the fragile bony remains are at once violently broken into fragments. Therefore objects such as those with which our attention is occupied are not numerous, and have not received that notice to which they are entitled. But to return to the dolicho-cephalic crania of the chambered barrows, supposed to indicate a “pre-Celtic race,” and upon which has chiefly been built the mighty doctrine—certainly mighty for such a meagre foundation—that an entire race of a distinct people, in some very remote period of antiquity, migrated to the shores of the British islands and invaded them, established themselves therein and dwelt there for ages. In some cases the evidence for this vast hypothesis—countenanced by ethnologists of the greatest learning, men well meriting the high reputation they enjoy—may be explained in a much simpler way. In a Derbyshire barrow, called Long Lowe, three crania of this type occurred, which we are strongly inclined to regard as having a family relation, and as exhibiting a mere family peculiarity. One, a long, flat skull of beautiful outline, is that of a man, aged about forty years; another, that of a woman somewhat older; and the third, of a girl under ten years of age, who may be concluded to have been the daughter of the two above named parents. Another of the Derbyshire chambered barrows, which has been productive of dolicho-cephalic crania, is situated upon “Five Wells Hill,” and is unquestionably of

vast antiquity ; but we possess a skull from among the lowest interments in this barrow, which is of brachy-cephalic form, and the existence of which, in the position in which it was found, we cannot help thinking shakes the theory of the dolicho-cephalic pre-Celtic race to its very foundations. In fine, we may remark, that we see no sufficient ground for admitting a favorite hypothesis of the present day, that another race of people preceded the ancient Britons ; which kind of doctrine has not been confined to the British isles, but took its rise in Denmark and Norway, where it has received its chief attention and illustration, although it should be mentioned, that the order of precedency has been inverted there, and the brachy-cephalic, not the dolicho-cephalic people, have been supposed to come first.

III. The next important aberrant form is one that is remarkable for horizontal expansion, and which we have denominated *platy-cephalic*. The cranium is not deficient in longitude, but does not impress the eye by its length on account of being equally expanded in breadth. It forms a skull of considerable capacity, and is well exhibited in the cranium from the Western Hill Barrow, No. 6, although not very apparent in the lithograph of the profile.

IV. These are the chief aberrant forms. It is probable there may be another distinguished by the extreme elevation of the vertex, to which the name of *acro-cephalic* is applicable. It is not unlikely that the skull from the barrow at Kennet, near the famous avenue and megalithic circle of Avebury in Wiltshire, in the lithograph No. 9, is an instance. Its extraordinary facial form we fear is partly to be attributed to some distortion arising from an imperfect restoration from the fragments to which it was reduced when found.

From the remarks now made, it will be seen that our investigations are far from giving countenance to a doctrine, announced by a very respectable authority, that in primeval times the skulls of mankind were much more alike than in the present day, that they were, as it may be said, "stereotyped" in one mould. So far from this, we believe it may be proved in this field, as in all others, that diversity within certain definite limits has been the beautiful law of nature from the first.

In *stature* we have reason to know the ancient Britons varied a good deal. A famous skeleton of a British chieftain, discovered in a coffin made out of the trunk of a tree, in 1834, at Gristhorpe, near Scarborough, and now preserved in the museum of that town, measured 6 feet 2 inches in height. Another skeleton, also from the North Riding of Yorkshire, in the rich museum of British antiquities of Mr. Bateman, of Youlgrave, in Derbyshire, measures only 5 feet 3 inches in height. Whilst that of a British woman in the same museum, from a Derbyshire barrow called "Wagon Lowe," near Buxton, measures 5 feet 5½ inches in height.

No one has labored so earnestly, so diligently, and with so much pains and care as the late Professor Morton to bring the test of the measurement of crania of various races to the elucidation of different obscure problems of anthropological science. It becomes us, therefore, to explain what little information we have been able to collect upon this subject. At present it is but little, still in the course of another year



or two we trust to make it much more complete. In bringing our present imperfect evidence before the Academy, we hope to be excused for remarking, that we are not inclined to expect quite so much or quite such conclusive information from the determination of the capacities of crania as Morton did. And we are satisfied that a much more extended observation, upon a more defined basis than he adopted, is requisite to develop data of a reliable character as to the relative capacities of different series of skulls. One great source of error will require to be eliminated, arising from taking any series of crania above a certain age, provided they are not idiots, *indiscriminately, and without regard to the relative numbers of the different sexes*. For instance, from the remarkable and well known difference in the size of the skulls of men and of women of the same race, if we have an equal number of crania of two races to compare together, the one series containing a greater number of those of women than the other, the whole calculation will be vitiated. But without dwelling further upon these questions at present, we will give, in a tabular form, the internal capacities of a few ancient British crania, merely explaining that they are all those of men, and are taken with dry sand by weight. In order, however, to render them as far as possible available for comparison with Morton's great table laid before the Academy in the year 1849, and published in the "Proceedings" for that year, we have converted them into the denomination of cubic inches employed by him, and arranged the figures exactly as he did.

Number of Ancient British skulls of men 11.

Largest internal capacity.....110.15 cubic inches.

Smallest do. .... 87.7 "

Mean do. .... 98.6 "

These results do not admit a strict comparison with the table of Morton, on the ground already stated, that the British skulls had belonged to men exclusively. Still, we will be safe in comparing Morton's largest internal capacity with ours of 110.15 cubic inches, for, no doubt, both were derived from the skulls of men. The largest internal capacity in his whole table, 114 cubic inches, was found in the skull of a Dutchman, who was born at Utrecht, and died in Java. In fact, it is the largest cranium in the grand Mortonian collection. A skull of an ancient Britain, found in Green Lowe, in Derbyshire, which has probably belonged to a Coritanian, has a capacity of 110.15 cubic inches, or within 4 cubic inches of the same size. The largest of Morton's *English* skulls had an internal capacity of 106 cubic inches, or 5.15 cubic inches less than the Green Lowe Barrow cranium, and the largest of Morton's *Anglo-American* skulls was no less than 13 cubic inches less than this from the Green Lowe Barrow in internal capacity. From this small and imperfect amount of evidence we appear to be justified in concluding that the crania of the ancient Britons were by no means deficient in internal or cerebral capacity. Much more numerous observations are, however, required before any data can be deduced on this subject, of a nature as satisfactory as the evidence will admit.

It may not be impertinent to mention here, parenthetically, that the skull of largest internal capacity we have met with is an ancient *Irish* calvarium, found in 1855, at a depth of ten feet in Suffolk street, in

Dublin ; of course the term ancient in this place must be taken conditionally, as applying probably to medieval and not to primeval times. The internal capacity of this calvarium is not less than 123.5 cubic inches, or very nearly 10 cubic inches more than that of the Dutchman of noble birth in the Mortonian collection.

An assertion is frequently made by the advocates of the progressive development and improvement of all races, which it may not be improper to allude to here. They maintain that the influence of what is denominated civilization is able to develop the brain of any race materially in the course of ages, and consequently its osseous case. This doctrine of development is distinct from that which affirms that different races of men are distinguished by crania of different capacities ; on the contrary, it supposes that all races may, by a process of civilization and development, attain to a large capacity of the skull and corresponding great brain. As far as the observations of ancient British crania we have previously mentioned, they do not give any countenance to this theory of development. And we may add, that our further observations, although neither so numerous nor so extensive as they ought to be, and as we hope to make them, on ancient Roman and on Anglo-Saxon skulls, are equally far from rendering this doctrine support. Of the hitherto few skulls already engraved in the "*Crania Britannica*," we may refer to one ancient Roman skull derived from the city of York, the Roman "*Eboracum*." The internal capacity of this cranium amounts to no less than 104.7 cubic inches. Another fine cranium of an Anglo Saxon derived from an ancient cemetery in Cambridgeshire, has an internal capacity of no less than 109.6 cubic inches. As far, therefore, as these data go, they give no countenance to the assumption that, as races proceed in their advance from the state of barbarism upwards, their brains gradually expand. With the capability of all races to make this advance, another assumption that is usually associated with the former, we have nothing to do at present.

It would be quite unnecessary to remark upon the permanency of cranial forms before an Academy presided over by Morton, any more than to dwell upon primitive diversity, which has already been alluded to. But the series of skulls to which the attention of the Academy has been solicited, afford additional evidence which bears upon these points. And an attentive consideration of ancient skulls will develop a series of remarkable diversities.

Professor Morton, in his elaborate and well-reasoned work, "*Crania Aegyptiaca*," which stands in so near a relationship to this Academy, has pointed out in the most masterly manner the characteristics of the cranium of the ancient Egyptians. That delicate cranial form was proper to them, whom Morton ultimately concluded to be indigenous to the valley of the Nile, and strictly aborigines. It was, we believe, deserving of the epithet *indigenous*, or especially proper to the race, and had a relation to them alone, and to no other race, ancient or modern. There is a peculiarity in the generality of the mummified heads of the ancient Egyptians, well seen in the skulls also, which Morton has not expressly mentioned, but which always strikes us at the first glance. Like all ocular impressions, it is more readily perceived than described. But it

arises from the particular outlines by which the profile of the cranium is circumscribed. The *base line*, the most essential feature, runs along the whole of the base of the lower jaw from the tip of the pointed chin, and passing thence directly to and along all the external centre of the occipital bone as far as its tuberosity. This base line may be seen to be totally at variance with the line which bounds the ancient British skull in the same direction from the profiles before the Academy. We believe it is only found in crania of an African lineage, and in none so level and uniform as in those of the ancient Egyptians. If we let down upon this base a facial line, which shall run along the forehead, and, with only a slight deviation, till it runs also along the fore part of the pointed chin, we thus bound the cranium in these two directions by right lines, which meet at a more acute angle than in any other race. They are strictly Egyptian in their character, for in the negro races this facial line has no proper commencement from the receding forehead, and is seriously interrupted by the prognathous jaws and teeth. It is the form we have thus endeavored to analyze and describe which imparts to the ancient Egyptian skull its delicate and elegant character.

How diverse is the robust erect form of the ancient British skull, marked by great depressions of the facial surface, and instead of the graceful long nasal bones, abrupt and short ones, standing immediately below the frowning frontal protuberance, with the intervening hiatus. All which features impress the mind with feelings of a much less complacent kind, and inevitably lead to the conviction that we have before us the representation of a bold uncivilized nature—full of power, and not deficient in capacity, but quite incapable of refinement and the graces of cultivation. These Egyptian and British cranial forms are strikingly at variance, although probably owning an equal antiquity—indeed we see no good reason whatever, why these different people may not have been primeval contemporaries; and yet the marks of diversity they present are as clear and sharp as any that can be adduced among any modern people. They point, therefore, in an irresistible manner to a primordial difference.

The ancient Britons themselves, it is probable, may be regarded as an *indigenous race*, *i. e.*, taken as a whole, proper in their characters, physical and moral, and distinct from all others. Whether the ancient Gauls resembled them in all particulars, seems very doubtful. They admit of comparison with other people of ancient and modern times, but we are inclined to think, were we able to realize a faithful and complete picture of them, it would present irreconcilable discrepancies with other races. They had many marks of agreement with the Indian tribes of North America. They dwelt in a temperate region, where animal and vegetable life was abundant, and devoted themselves to the chase, in which they were assisted by the aboriginal hounds of Britain. Claudian, in his allusion to these dogs, represents them as capable of overcoming bulls.

. . . . . hæ pedibus, celeres: hæ nare sagaces.  
Hirsutaque fremunt Cressæ, tenuesque Lacænæ,  
Magnaue taurorum fracturæ colla Britannæ.

The Britons were equally possessed of the small indigenous horse of the country. They also found in the native forests animals of chase of



equal, nay greater, magnitude than that of the buffalo of the prairie, and we have reason to think, were as successful as the Indians of the northern part of this continent in their pursuit of them. A barrow opened in the parish of Cherhill near Calne in Wiltshire, in 1833, revealed a number of bones, and among them were the enormous horns of an ox, the *horn-cores* of which had a circumference of  $15\frac{1}{2}$  inches at the root, and in their widest expansion, a diameter of 33 inches. Besides this colossal ox they had other bovine cattle, and deer, of the hunting of which with hounds the Romano-British pottery affords numerous pictures, as it seems to have been a favorite subject with the artists for the Samian ware. It appears at first view an astonishing circumstance that the weapons of chase, the arms and implements of the ancient Britons should be almost identical with those of the ancient race of Indians of this continent. The same spear-heads, arrow-heads, axes, etc., of the earlier North American Indians are of the same forms as those of the ancient Britons, and they differ only in material. Instead of the constantly occurring flint of the Britons, the North American tribes have used flint more sparingly, and a series of other hard and beautiful stones, such as chalcedony, jasper, crystal, etc., for the production of these weapons. To the kindness of Mr. Franklin Peale, a highly esteemed Member of this Academy, the writer is indebted for a very fine collection of the stone implements and weapons of the North American Indians, which excited surprise to find them so closely approximating to those of the ancient Britons. The truth is the resemblance now alluded to seems to be confined by no limits of latitude or longitude. The stone weapons and implements from Japan in Siebold's Museum at Leyden we found to be scarcely distinguishable from the British; and we have also seen flint spear-heads from New Zealand, not only closely approximating the ancient British ones, but actually fashioned with the same number of strokes, given in the self same direction.

In accordance with the prevailing views on the origin and distribution of man, this extraordinary similarity in the stone weapons and other utensils of such widely distributed races has been ascribed to the distribution of the makers, and the communication of the art. An hypothesis, we believe, out of the limits of possibility by any natural means of diffusion. Whereas, the simple circumstance that these weapons are all produced by beings of similar powers and capacities, having similar wants, and similar objects wherewith to satisfy those wants, is an adequate explanation of the phenomenon; and according to all right principles of philosophy should be admitted at once.

That the ancient Britons adopted the flexed or crouching posture in the interment of the dead, just as the Indian races of America, we have abundant evidence. This again is a practice generally diffused among all uncivilized races, the aborigines of Australia adopting it as well as others. There need be no question also, that is to be referred to some common cause operating on all alike; very probably to a desire to imitate that posture which is both easy and agreeable to them, in the hut or around the fire, and associated in their minds with the most pleasing recollections of life; therefore fittest in which to renew life, and to begin again the social intercourse and delights of another world beyond the

tomb. For it should never be forgotten that savages, as we call them, are not brutes, but richly endowed with all the sentiment of the human mind, and animated by its highest aspirations.

How far the ancient Britons advanced in that general development which we call civilization, it is difficult to ascertain. That the more southern tribes, especially, received from the Phœnician traders, implements and weapons of bronze, and learned the art of manufacturing such themselves, is now pretty satisfactorily determined; although it is very questionable whether these superseded the earlier stone ones wholly anywhere, but especially in the remote districts of the country. Their fate was by a succession of imperial armies to be kept in check, to be subjected to a succession of conquests, and ultimately to be in large part reduced to slavery, whether in their native regions, or in Italy and in the other dependencies of the empire. Those who can lay claim by descent to the nearest relation to the aborigines of the British Islands are still a peculiar people, marked in every feature of their characters by traits which distinguish them from the races of other blood with whom they have been for so many ages contact. Thus proving that the lineaments of nature cannot be effaced by all the chances and changes of time.

ART. IX.—*Amylenic Anæsthesia. Experiments in support of the Innocuity of Amylene, and its value as Anæsthetic Agent*: By DR. DEBOUT, a Memoir presented to the Academy of Medicine at its sitting of March 12, 1857. Translated from *L'Union Médicale* of March 17, 1857, by M. MORTON DOWLER, M. D., of New Orleans.

THE use of anæsthetics is immovably established. Few or none can henceforth be induced to undergo any painful or protracted surgical operation without a resort to the "sweet oblivious antidote." The study and discovery of anæsthetic agents becomes, therefore, a subject of overwhelming importance. Whatever hazards may be necessarily connected with anæsthesia, must be constantly incurred. The dangers which attend the use of one of the two leading agents now employed, have led experimenters to the pursuit of a *desideratum*, namely, an agent possessing a power intermediate between chloroform and ether. The discovery of the anæsthetic effects of anylene by Snow of London, opens the question as to whether such *desideratum* has been obtained. Such is the question which is now agitated. Desirous to contribute to the solution of this question, we have conducted a series of experiments on animals, in order in the first place, to determine the degree of innocuity of anylene.

[Here the author quotes an extract from the paper of M. Tourdes,

which we have translated for the present No. of the New Orleans Medical and Surgical Journal.—*Trans.*]

Our experiments, continues M. Debout, go to fully confirm those of the learned Strasbourg professor, in relation to the innocuity of amylenic. If, in several wide-mouthed bottles, each containing two cubic *litres* of air, we place animals which are very susceptible to the action of anæsthetics, as sparrows, for example, it will be found that on letting fall two drops of chloroform into one of the bottles, the contained bird will be thereby anæstheticized; that five drops discharged into the second bottle will cause the bird to be overwhelmed. When the experiment is made with amylenic, insensibility is obtained with ten drops, and if the quantity be raised to fifty drops, the animal still returns to itself, provided its sojourn in the amylenic atmosphere be not prolonged beyond one minute. The amylenic prepared in Paris has produced identical results with that prepared in London. Dr. Snow, of London, has done the favor of sending us a sample of the amylenic which he has employed, which enables us to assure ourselves that the chemical products employed in experimentation are identical.

These experiments which we have repeated a great number of times, assisted by M. Duroy, go to show that whilst the toxic dose is only double the anæsthetic dose of chloroform, the quadruple for ether, and the quintuple for amylenic, are the ratios between the anæsthetic and the toxic doses, and it hence follows that the innocuity of the new anæsthetic exceeds that of sulphuric ether.

The perusal of the cases which we shall detail in another portion of this article, will show that amylenic exceeds sulphuric ether in rapidity of action. Limited as our observation has been in regard to age, sex, constitution, etc., in the number we have submitted to the inhalation of the vapors of amylenic, we have witnessed sufficient to enable us to trace a parallel between the action of the new agent and that of chloroform and ether. Such manner of study will the better enable us to appreciate the value of the discovery of Dr. Snow.

The vapor of the new agent, notwithstanding its odor, which is not altogether agreeable, is readily tolerated, producing neither cough nor other disturbance in the patient submitted to its influence. This results from the very light degree of irritation which it produces in its contact with the buccal and bronchial mucous membrane, there being an absence of that salivary flow which sometimes requires the inhalation to be suspended when either chloroform or ether is used, in order to permit the patient to disembarass the mouth of the accumulated saliva. There is no pricking or tingling of the throat and chest, which explains the absence of cough. A certain degree of nausea is produced, which



is an inconvenience it possesses in common with the two other agents in use. Two of our subjects who had on former occasions been anaesthetized with chloroform, decided in favor of amylene, a preference they based on the absence of cephalalgia after resuscitation and the retention of their appetite. All of the patients submitted to the vapor of amylene could take food some hours after the operation.

The volatility of amylene demands for its administration an apparatus, the open end of which ought to fit the mouth and nose in order to secure rapidity of action. M. Charrière has so modified his chloroform inhaler as to adapt it to the administration of the new agent.

Amylene acts more promptly than ether, two minutes having often been sufficient to render adults insensible to pain; this rapid result being observed when the patient's mind is not too much preoccupied with the operation, and when he has respired the vapor freely.

In the rapidity of its anæsthetic action we may readily endorse the assertion of Dr. Snow, and rank the action of this new agent as intermediate between ether and chloroform.

The time necessary for the production of insensibility by means of amylene, ranges ordinarily from two to six minutes. When the inhalation is prolonged beyond that space, in order to produce the effect, it is most generally owing to the emotion of the patient, and to his preoccupation with the operative manœuvres to which he is about to be subjected. In one case, that of a pusillanimous old man, half an hour was required, and after all the anæsthesia was incomplete during the whole operation. His case will be found in another part of this paper.

The excitation which marks the first stage of anæsthesia is better marked under the use of amylene than when either chloroform or ether is employed. It is absent in nine-tenths of the cases, and when it makes its appearance, the stimulation is feebler and of shorter duration.

The duration of anæsthesia superinduced by the amylenic vapor, is of short duration, a minute hardly elapsing after the withdrawal of the apparatus, before the effects vanish. If the surgical operation be painful, it becomes indispensable to maintain the insensibility of the patient, and to require him to breathe the amylic vapor during the whole operation. When the somnolence is profound, the inhalation may be intermittent, but a very short interval must be allowed to elapse between the cessation and the resumption.

The insensibility produced by amylene is less profound than that produced by chloroform. Certain reflex movements are often observed, indicative of incomplete anæsthesia. Nevertheless, in all cases the extinction of sensibility is attained.

Intellection seems to be maintained, and the patients, when they have not been conscious of the painful period of the operation, retain the remembrance of facts attending the inception of their anæsthesia.

The moral manifestations of the patients are not less remarkable. At their awaking and on recovery from the first moment of stupor, their normal physiognomy is restored. We have never seen either that exaltation, so frequently provoked by inhalation of ether, or that explosion of extravagance which results from alcoholic intoxication.

During anæsthesia by amylene, when the insensibility is most complete, the pulse remains large, full and very frequent, the respiratory motions ample, the skin warm—signs which show that the new agent operates mildly on the functions of organic life.

And if we add that the maximum of anæsthetic action is coincident with the last inspiration of the amylenic vapor, and that it is only necessary to suspend the agent for the space of one minute in order to restore the patient to himself, we must be convinced that if the action of amylene be more prompt than that of ether, the disappearance of the anæsthetic phenomena is correspondingly more rapid. As to the dangers attending the administration of the new agent, arising from certain idiosyncrasies, they are such as might be expected to be in common with those attending the use of sulphuric ether, namely, apoplexy and syncope.

(*To be continued.*)

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DR. LOUIS BAUER, of New York.—*Lecture.* (Communicated.)

It is with great pleasure that we notice the recent visit to our city, of our estimable friend and collaborator, L. Bauer, M. D., of the Orthopædic Institution, of New York. The Doctor paid us the compliment with a view of enlisting the interest of the medical profession of New Orleans, for his meritorious enterprise, to introduce himself to his professional brethren in the South, in a manner becoming his position and scientific attainments, by delivering a lecture at the Charity Hospital, on Hip diseases. The lecture was comparatively well attended, and the audience embraced the most eminent men of the medical faculty, which must be acknowledged as a well-merited compliment. The limited time given to our distinguished lecturer, did not allow him to exhaust the important subject he had chosen. In fact, the lecture consisted only of

two parts. In the first, Dr. Bauer reviewed with great acuteness and inflexible logic, the doctrines hitherto adopted and followed by the profession at large, whose fallacies he brought conclusively to the mind. In the latter part, he gave to the audience a synopsis of the results of his personal investigation and experience on the subject under discussion; thus he threw new light upon a surgical topic hitherto entirely obscured and misunderstood. We can only say that Dr. Bauer's lecture was both interesting and instructive in the highest degree, and even to men of surgical experience. General satisfaction was expressed at the termination of the lecture.

We refrain purposely from entering into the nature and bearings of Dr. Bauer's peculiar views and surgical conceptions with reference to hip diseases, and the more so as he has kindly promised a full serial statement of them from his own pen in the New Orleans Medical and Surgical Journal.

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## REVIEW.

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*A Treatise on Therapeutics and Pharmacology or Materia Medica.*  
By GEORGE B. WOOD, M. D.; late President of the American Medical Association, President of the College of Physicians of Philadelphia; Professor of the Theory and Practice of Medicine in the University of Pennsylvania; Senior Physician of the Pennsylvania Hospital; one of the authors of the United States Dispensatory; author of a Treatise on the Practice of Medicine, etc., etc. Two vols. 8vo. I 840, II 901. Philadelphia: J. B. Lippincott & Co. London: Trübner & Co., 1856.

Books and serial publications multiply daily, and did the duration of life augment in the same ratio, a majority of authors might indulge the fond hope that their works, and the reviews of them, might possibly be read with due attention, and the more so as these works shall be of a practical character, such as those of Dr. Wood, on *Materia Medica*, *Therapeutics*, and the *Practice of Medicine*. Neither advanced students nor practitioners, will, however, be apt to read the able and almost encyclopædic work named above, in a continuous manner; but they will refer to it often for information upon particular topics suggested by the doubts, difficulties and problems incidental to daily practice.



Such works, how useful soever they be for a time, will be rendered in some degree obsolete by the progress of science.

Professor Wood has devoted more than the third of this century to the teaching of *Materia Medica* and *Therapeutics*, and now his teachings are brought before the medical public in two large and elegant octavo volumes. As a lecturer, professor, author of a standard work on the *Practice of Medicine*, and as one of the two authors of the *American Dispensatory*, he has from duty as well as from choice, made the *Materia Medica*, together with its practical application in disease, a subject of much investigation, which, in connection with his acknowledged ability, are presumptive evidences, if not absolute guarantees, that this work must be, what it is, a most valuable one. The same teachings by one less experienced might not prove so satisfactory and convincing upon a branch of science, which, from its nature is so difficult to generalize, that the greatest intellects trained in the experimental school, must in a great degree be content, for the present, with either probabilities or provisional assumptions, scientific classification being often out of the question. Almost every word in the *Materia Medica* concerning the mode in which medicines act upon the membranes, glands, absorbents, nerves, blood, muscles and the life, represents a theory or transcendental idea. The best explanations which can be given to the terms sedative, stimulant, tonic and many more, are chiefly transcendental, or what is to the same effect, their validity as explanations is not determinable by satisfactory criteria or rational experimentation. Fortunately, while classification assists the memory, even though artificial or erroneous, the curative efficacy of a medicine, though the result of empiricism alone, is not impaired by such error. "A rose would smell as sweet by any other name." Call quinine a tonic, a stimulant, a sedative, or by any other name, yet its effect upon certain morbid phenomena will not be altered by the theoretical view of the prescriber. Some of the phlegmasiæ, particularly in their inception subside under the influence of opium, and whether the latter be considered as an antiphlogistic or stimulant, the effect is the same, being at the same time all that is known in the matter. No human intellect has yet been able to ascertain by means of chemistry, anatomy, physiology, or other sciences, any necessary connection, fitness or adaptation in quinine to cure an ague, or in opium to cure a phlegmasia, remove a pain, or induce sleep, much less can any one trace the *modus operandi* step by step as cause and effect, with a clearness and certainty so that these cannot be conceived as being otherwise possible.

That opium or any other medicine will produce a definite effect upon

the living body is known, therefore, solely by experience and observation, and apart from this kind of evidence nothing appears to show that a directly contrariwise action might not take place. The mode and final cause of action not being known, the explanation is not possible in any other way than that of antecedence, sequence, or phenomenal succession.

The word explanation in therapeutical philosophy is, therefore, for the most part, neither more nor less than the indication or reference of one fact to another as its antecedent, concomitant, or sequent. Knowledge postponed!

Neither analogy, parallelism, nor homology of chemical composition is an infallible guide to a therapeutic finality. Is there not in pathology, physiological and pathological chemistry, an *isomerism* as well as in the purely physical domain of chemistry?

"Benzoic acid," says Prof Löwig, "and salicylous acid belong to the most interesting isomeric compounds. With the same atomic constitution they show chemically and physically the greatest differences. Benzoic acid is one of the most permanent organic substances, not alone because of its expelling salicylous acid from its combinations, but, in its alkaline solution exposed to the air, it does not suffer the least change, whilst salicylous acid, under the same circumstances, soon separates into acetic and melanic acid. The cause of this different behavior can be sought only in the different mode of union of the elements." (*Org. Chem.*) A provisional postponement!

A medicinal plant, or mineral may be identified and classified botanically or chemically, but the effects of cinchona or of iodine upon the living economy are either not uniform, or if uniform cannot be invariably recognized as such. Hence the effects of a medicine cannot be foreseen with absolute certainty only within a certain limit. Ten grains of cinchona will not poison an individual, but no one can affirm before trial that this dose will cure an intermittent upon any known physical or physiological principle or analogy.

Criteria are wanting to show the genus to which the cinchona, one of the best understood remedies, belongs as a species in a therapeutical sense. It may or it may not be a tonic in the accepted meaning of that word. All that can be affirmed positively is, that it is a curative agent in certain doses in several diseases. Although it is classed with other tonics, yet the reality of such a class is questionable. The term *tonic* is but a convenient provisional one, very useful in arranging several articles of the *Materia Medica*, even though their mode of action and curative powers may not be directly tonic in any case.

As a classificatory science, *Materia Medica* is very imperfect. Neither anatomical nor physiological, neither chemical nor mechanical criteria will, as yet, afford a satisfactory foundation for the arrangement of medicinal products according to an absolutely certain natural indentity or affinity. Analogy often slight, resemblance often remote, must guide the reasoner for want of better evidence.

The frequent fundamental changes in the methods of classification adopted by writers on the *Materia Medica* and Therapeutics, are due, chiefly, to the inherent obscurity attendant on the action of medicinal agents always liable to modification by the ever varying conditions, functional and organic, of the living economy in disease. Were the laws of health and disease, including the modifying influences of race, climate, constitution, idiosyncrasy, sex, age, habit, intellect, education, fixed and known, the physiological action of medicine, though necessarily complex, might, after abundant experiment, be fixed and known in like manner.

Hence no existing classification of the *Materia Medica* can be regarded as definitive and permanent, although until further advancement shall be achieved in science, it may be founded on probabilities, and may be convenient in aiding the memory more than a non-systematic one founded on the alphabet. An alphabetical arrangement is, however, less likely to perpetuate hypothetical views, than any yet devised. Alum and zinc though separated by one or two thousand pages, are readily referred to as in an ordinary dictionary.

The natural-history method applies to the study of the *Materia Medica* as natural history of objects or things, with which, however, their physiologico-therapeutical effects cannot be identified and classified as essential or constant. The chemical constitution of chloroform, is not *à priori* a test of its medicinal action. Nor does the former serve as a guide in its administration. The gravity, hardness, transparency and figure of crystallized salts do not indicate either their identity or difference of action in the living economy.

The physiological and pathological decompositions and recompositions under multitudinous co-existing influences, including animal heat and the agency of a medicine itself introduced into the living economy, all combine to render a desiderated result more or less uncertain.

In regard to the estimation of the effects of medicines through their chemical relations to the animal economy, Professor Wood says: "Analogy in chemical constitution is not unfrequently attended with similarity in medical virtues. The preparations of any one of the ordinary metals have a remarkable correspondence in their effects upon the system; and there are several metals which greatly resemble one another. The min-



eral acids, the vegetable acids, the inorganic alkalies, and the neutral salts of the alkalies, constitute groups, of which one individual may often be substituted for another without disadvantage. But in this respect, as well as in relation to sensible properties, there is so much uncertainty, that no practical conclusion in reference to the properties of any particular medicine should be relied on without careful trial."

Dr. Wood's criteria or fundamental characteristics for the classification of medicines are not derived from botany, chemistry or physics. He says, "As, therefore, the present work is devoted more especially to the therapeutic consideration of medicines, I have, without hesitation, adopted a system of classification, founded upon their relations to one another in their modes of affecting the human system.

"The question now occurs, admitting the effects of medicines to afford the true basis of classification, whether it is their physiological or therapeutical effects to which we should have recourse? At the first glance it might be supposed that the latter should be preferred. But a little consideration will decide against them. Formerly, when the notion prevailed that there were specific remedies for particular diseases, or classes of disease, an arrangement of medicines based on this principle was to a certain extent naturally adopted. Hence the terms antiphlogistics, febrifuges, antispasmodics, antiscorbutics, antisypilitics, antilithics, etc. But the fact is, that there is no specific, strictly speaking; that is, there is no remedy which is especially adapted to one disease and one only, and no curable disease which will yield only to one remedy; and in relation to a class of diseases, such as inflammations, fevers, and spasmodic affections, there is no one which does not require, in different stages, and under different circumstances, the same medicines which are found useful in the others; so that classes founded on this basis, would be constantly clashing, each containing the individuals embraced by the others; and thus all the advantages of classification would be lost. For example, in the treatment of the three sets of diseases above mentioned, in one or another of their stages or varieties, we employ bleeding, cathartics, emetics, narcotics, tonics, stimulants, revulsives, etc. The physiological effects must, therefore, be resorted to; and, happily, it will be found that, to one well acquainted with pathology, these effects, and consequently the medicines producing them, are suggested by the therapeutic indications."—82-3.

It is difficult, as this statement will show, to give a clear exposition of a subject which always was and still is involved in great obscurity, namely, a "classification of medicines founded upon their modes of affecting the human system," as these *modes* of operation, are, to a great extent unknown; indeed, it might be affirmed that the *modus operandi*

of not one medicine is completely known. To say nothing of the *modus operandi*, the externality or phenomenology of none is known to be so fixed and invariable as to serve as a sure basis for a scientific classification. Dr. Wood admits that there is a perpetual clashing in the therapeutic effects of remedies; that there "is no one class or disease which does not require, under different circumstances, the same medicines used in others." Now all scientific classifications or groupings must have one or more central types, or fixed, well defined and permanent characteristics, as the basis for studying homology, analogy, and differentia.

Dr. Wood repudiates a classification of medicines deduced from the treatment of diseases as clashing and fundamentally opposed to "the advantages of classification," confounding the effects of "bleeding, cathartics, emetics, narcotics, tonics, stimulants, revulsives, etc." Nevertheless, if this is not the best possible, is it not the best known route? No, says the author: "The physiological effects must, therefore, be resorted to; and, happily, it will be found that, to one well acquainted with pathology, these very effects are suggested," etc.

The inconclusiveness of this logic which *assumes* a fundamental antithesis between the physiological and therapeutical action of a medicine, is not so much the fault as it is the misfortune of the learned professor, seeing that he, as well as "the rest of mankind," has failed to discover, in either the *modus operandi* or even phenomenology of medicinal drugs, a fixity and universality in any physiological law, "without variableness or shadow of turning."

"The physiological effect of medicines" as an expositor of their therapeutic action, is not altogether conclusive. Here are two distinct conditions of the economy, the physiological and the pathological. They are analagous, not identical. Indeed, the action or effects of medicines upon the healthy and diseased states of the economy, notwithstanding more or less of contrast, mutually illustrate the phenomenology of medicines, not affording bases for separate classification.

Dr. Wood says, "that in *small doses*, quinia is essentially and universally tonic." Dr. Headland, in the last edition of his valuable work on the Action of Medicines, goes farther than Dr. Wood in this behalf, maintaining that "*Tonics are remedies, but not poisons*. Many a man has been killed by opium," says he, "and many a constitution ruined by mercury, but it has never been known that quinine has done the one or the other;"—163. Has Dr. Headland never seen blindness, amaurosis, deafness, phenitis, coma, delirium, and other persistent effects of quinine poisonings, not to name death itself? If he has seen none of these, his experience is very limited. Without quoting Southern cases, it may be seen by reference to Wharton and Stillé's Medical Jurisprudence, under

the head of "*Quinia*," that the latter is ranked as a fatal poison, cases of which are given from European and American authorities, including Dr. Wood himself. § 780.

That quinia is medicinal, curing fever and other morbid conditions, is very true, but as to its being "*essentially and universally tonic*" in either the sick or well, this is a proposition no more tenable than Dr. Headland's, namely, that quinia cannot prove poisonous, being "*a remedy but not a poison.*" What a pity that this distinction between remedies and poisons is altogether fanciful! But

A little assumption "now and then  
Is relished by the wisest men."

What natural classificatory resemblance or affinity is traceable between the tonics enumerated by Dr. Wood, namely, diet, exercise, pure air, mental influences, traveling, cold, transfusion of blood, codliver oil, bitters, Peruvian bark, etc.,—aromatics, minerals, etc.? The botanist finds in the florification, fructification or other parts of a plant, identity, difference or analogy, by which he can classify the same; but the therapist deals with conditions, the antecedents of which are nearly unknown, with functions and phenomena which virtually present themselves without appreciable uniformity. Experience, observation and reflection may, in most cases, afford him a homological or analogical type, by which he may trace amid apparently conflicting conditions, symptoms or groups of phenomena, a fundamental principle common to and subordinating all.

Whether the *Materia Medica* and *Therapeutics* can or cannot be established as classificatory sciences upon well defined bases, as set forth by Dr. Wood or any other writer, is to the physician of small importance compared with the practical question already stated, that is, what will cure? It may be that all cures are so many antitheses to the theories which guided the practitioner in the administration of remedies! A bad theory does not always imply a bad practice, and *vice versa*.

"An acquaintance with pathology," quoth Prof. Wood, "will suggest the therapeutic indications." True; because one who "is well acquainted with pathology," must have got his knowledge by the therapeutic method. The greater includes the lesser; the whole, the parts. An acquaintance with swimming implies water. Physiology is Prof. W.'s test, then pathology is the test of medicinal action, while clinical medicine is too "clashing" to stand the test at all! Professor Wood's *Therapeutics* may be the best book of its kind; but the bedside, including the occasional sequel in the dead-house, is the book of nature—the book.



There is, after all, no fundamental antithesis between physiological and pathological actions as tests of therapeutic agents, but there is a unity of knowledge implied common to both. Either may be greatly subordinated to the other according to the selected point of departure. If that point be purely physiological, then even pathological states as well as direct experiments or vivisections serve for illustrating and fixing the laws of physiology, making due allowance for the perturbing element ; on the other hand, if pathology be the end aimed at, physiology is appealed to as a means to ascertain, limit and fix its derangements, abnormalities or diseases, and thereby enabling the observer the better to establish the existing differential diagnosis. Therapeutical laws, however, cannot be directly deduced from these sources in any other way than that of experience, having a foundation of their own, including physiological parallelisms as well as antitheses.

It is remarkable, that while several diseases are so well known as to be recognized with much certainty, the comparative efficacy of different curative agents and different curative methods seem never to have been tested in an unexceptionable manner, upon an extensive, rigid numerical scale. Nor is such a comparison likely to be made in a proper manner. Thus the numerical results of two thousand similar cases, in similar circumstances, of yellow fever or any other disease, 500 having been treated solely by synepal blood-letting, 500 by quinine or opium only, 500 by mercurial purgatives and 500 without any medicine, would afford data more reliable for therapeutical conclusions than all the books extant.

The Hahnemannian theory of classifying medicinal agents is simple, definite and apparently comprehensible, namely, *similia similibus curantur*; the morbid symptoms produced in a healthy body by a medicine, are removed from a sick one by the same medicine, arsenical poisoning being cured by arsenic ; salivation by mercury ; narcotism by narcotics, and so on *ad infinitum*. This mode of testing and classifying medicinal agents, notwithstanding certain equivocal favoring analogies, lacks one fundamental requisite, namely, evidence, experimental reality, but its great prevalence is a presumptive proof that no existing classification of therapeutical agents is founded, either on self evident principles or on principles clearly deducible at the bedside. In practice, as well as in theory, it may be easy to see the supreme absurdity of the Hahnemannian standard of classification, though it may not be possible at present, to offer one which is altogether satisfactory, especially if the pathological conditions can afford no aid in this behalf.

It must not be hence inferred that nature contradicts herself ; nor that medicinal agents act capriciously by antitheses and by an eternal opposition to themselves as cognized through their phenomena. At first

view, observation and experiment seem to show that the same medicine produces the most opposite effects. The analogical evidence of all the sciences indicate contrariwise. It is reasonable to suppose that the apparently opposite effects which sometimes occur from the exhibition of the same doses, are due to peculiar and inappreciable antecedents and existing conditions of the animal economy as to health, or disease, etc. The same medicine, in the same dose, and in the same condition of the economy, will, doubtless, produce the same effects evermore.

In regard to the question whether the effects of medicines are organic or functional, Dr. Wood says, "we may assume as functional effects all that are not attended with appreciable structural change; and as organic, all that are attended with such change. The effects of the great majority of medicines, as ordinarily used, are exclusively functional; and it is chiefly those employed externally, to inflame, vesicate, or cauterize, that can be said to operate essentially any change of structure."—30-1.

Cell-physiology, cell-growth, cell-death, cell-pathology, and cell-therapeutics, terms at present much in use, are not clearly appreciable in the sense of efficient or final causes—causes which include the adaptation of means to definitive or ultimate ends. Indicative of certain, nay very often *uncertain* phenomena chiefly developed by micrological research, these words and the facts they represent, leave the laws of life, of disease, and of cure, as little more than provisional assumptions, explanations postponed indefinitely or laid on the table, as parliamentarians would say, subject to call.

While Dr. Wood rejects chemical action as the basis of a general theory of the action of medicines, in the economy, he distrusts cell-agency, however modified by medicine, as necessarily causing "any change of structure; one or more cells have disappeared, and their place has been supplied with one or more cells of the same character exactly. The organ is precisely as before. There has been change of matter, but no change of structure or organization."—I, 30.

Dr. Wood produces neither microscopic nor other evidence demonstrative of this positive affirmation. Independently of microscopic research, analogy and clinical experience show that structural changes for good or evil take place from both the external and internal administration of medicinal preparations. Among innumerable examples, that of mercury is sufficient to show how a single dose will sometimes modify the salivary and other organs, including the bones, for many weeks. Who can rationally affirm upon the evidence of analogy or that of direct experiment, that before, during, and after such a medication or poisoning, "the cells were of the same character exactly."—EDITOR.

(To be continued.)

## Editor's Office.—Notices.

MAY, 1857.

NEW JOURNALS: *L'Art Dentaire: Revue Mensuelle de la Chirurgie et de la Prothèse dentaires: Par M. M. FOWLER et PRETÈRE*. Dentists Americans. à Paris, No. 1. vol. I. January 1857. Large 8vo. double columns. Pp. 32; illustrated with engravings. 29 Boulevard des Italiens, à Paris,

*American Druggists' Circular and Chemical Gazette*: Monthly. H. Bridgman: New York.

### BOOKS AND PAMPHLETS RECEIVED.

*The Physiological Anatomy and Physiology of Man*: By Robert Bentley Todd, M. D., F. R. S.; Fellow of the College of Physicians, and Physician to King's College Hospital; and William Bowman, F. R. S., Fellow of the College of Surgeons; Surgeon to King's College Hospital, and the Royal London Ophthalmic Hospital; late Professor of Physiology and general and morbid Anatomy, in King's College, London. One vol. Pp. 926. 8vo., with 298 illustrations. Philadelphia: Blanchard and Lea. 1857. From Mr. T. L. White, Bookseller, 105 Canal street, N. O.

*An Exposition of the Signs and Symptoms of Pregnancy, with some other Papers on Subjects connected with Midwifery, from the second and enlarged English edition. With colored plates, and numerous wood-cuts*: By W. F. Montgomery, A. M., M. D., M. R. I. A.; ex-scholar of Trinity College, Dublin; Professor of Midwifery in the King and Queen's College of Physicians, in Ireland; lately President of that College, and one of the Presidents of the Pathological Society; one of the Presidents of the Obstetrical Society; member of the Société de Biologie of Paris; member of the Imperial Medical Society of Vienna, and of the Society of Natural Philosophy and Medicine at Heidelberg. Pp. 568, 8vo. Philadelphia: Blanchard and Lea. 1857. From Mr. T. L. White, Bookseller, 105 Canal street, N. O.

*Clinical Lectures on certain Diseases of the Urinary Organs, and on Dropsies*: By Robert Bentley Todd, M. D., F. R. S., Physician to King's College Hospital. Pp. 283, 8vo. Philadelphia: Blanchard and Lea. 1857. From Mr. J. C. Morgan, Bookseller, Exchange Place, N. O.

*The Physician's Pocket Dose and Symptom Book*: By Joseph H. Wythes, A. M., M. D., etc., etc. Second edition. Pp. 230, 18mo. Philadelphia: Lindsay & Blakiston. 1857. From Mr. J. C. Morgan, Bookseller, Exchange Place, N. O.

*Report of the Commissioner of Patents for the year 1855. Arts and Manufactures, with illustrations*: Vols. II. Pp. I. 784; II. 340 text; Pp. plates 380, 8vo. Washington: 1856. From the Hon. J. P. Benjamin, United States Senator, of Louisiana.

*An Essay on Muscular Action and its Condition: The ninth of a series of articles published in the St. Louis Medical Journal, "On Life"*: By J. H. Waters, M. D., Professor of Physiology in the St. Louis Medical College. From the author. Pp. 23.

*Report of the Pennsylvania Hospital for the Insane, for the year 1856*: By Thomas S. Kirkbride, M. D., Physician to the Institution. Published by order of the Board of Managers. Pp. 68. Philadelphia: 1857.

*An Essay upon the Relation of Bilious and Yellow Fever, prepared at the request of, and read before the Medical Society of the State of Georgia, at its Session held at Macon, on the 9th April. 1856*: By Richard D. Arnold, M. D., Professor of the Theory and Practice of Medicine in the Savannah Medical College. Pp. 30; plates 3. Augusta, Ga. 1856. From the Author.

*Report of a Committee of the Board of Administrators, of the University of Louisiana, upon the Organization of the Collegiate Department*: Read, December 23d. 1856. New Orleans. 1857. From J. S. Copes, M. D., Committee.

*Are Mercurials Anti-Syphilitics?* By C. H. Cleveland, M. D. Pp. 30. Cincinnati. 1857.

*Homæopathy; Its Testimony against itself*: Reprinted from the Boston Medical and Surgical Journal, with additions. Pp. 28; 12mo. Boston, printed for the Author, by D. Clapp. 1857.



## TABLE OF CONTENTS.

### ORIGINAL COMMUNICATIONS.

	PAGE.
ART. I.—Scarlet Fever: By James D. Harper, M. D., Minden, Louisiana. . .	741
ART. II.—Phrenology and Physiology compared: By Drury Lacy, M. D., Shreveport, Louisiana. . . . .	746
ART. III.—Post Mortem Examinations in the Yellow Fever of Natchez: By Samuel A. Cartwright, M. D. . . . .	755
ART. IV.—Houston, (Texas,) as a Residence for Consumptives: By James Cowling, M. D. . . . .	766
ART. V.—A few Practical Hints to the Country Physician: By W. L. Gam- mage, M. D., of Rusk, Texas. . . . .	769
ART. VI.—On the importance of Bleeding in Protracted or Tedious Labors: By R. Riley, M. D., of Madison Co., Miss. . . . .	773
ART. VII.—Man and his Organic Relations to Time and Space: By Wm. D. Kersh, M. D., Member of the American Association of Geologists and Naturalists; Winsboro,' South Carolina. . . . .	776
ART. VIII.—Gigantic Development of the Head ( <i>Macrocephalus</i> ) in the Dwarf, William Thomas Andrews; together with Remarks on Hyper- trophy and Dropsy of the Brain, and allusions to Phrenology and Monstrosity: By Bennet Dowler, M. D. . . . .	778
ART. IX.—The Poisoning at the National Hotel: By Albert W. Ely, A. M., M. D., Washington, D. C. . . . .	796
ART. X.—Comatose Phrenitis. Cure. . . . .	800
ART. XI.—Atresia Ani: By A. Davis Brasher, M. D., of Lake Village, Arkansas . . . . .	801

### PROGRESS OF MEDICINE.

ART. I.—Researches on the Anæsthetic Effects of Amylene: By N. G. Tourdes, Professor in the Medical Faculty of Strasbourg. Translated from the Gazette Hebdomadaire de Médecine et de Chirurgie, of March 6, 1857: By M. Morton Dowler, M. D., of New Orleans. . . . .	803
ART. II.—The Silicate and Benzoate of Soda in connection with Aconitum and Colchicum, in the treatment of Gout, Gravel, Chronic Rheumatism, Vesical Catarrh, Sciatica and various Neuralgias. Translated and condensed from the Journal des Connaissances Médico-Chirurgicales, of October 1st, 1856: By M. Morton Dowler, M. D., New Orleans. . . . .	814
ART. III.—Extracts from the Journal des Connaissances Médico-Chirurgi- cales. Translated by M. Morton Dowler, M. D., of New Orleans. . . . .	818
ART. IV.—Case of Complete Occlusion of the Vagina in a Girl of Nineteen —Occlusion produced by the Retention of the Menstrual Flux: By Dr. Rozies, of Toulouse. From L'Union Médicale of January 17, 1857; translated for the New Orleans Medical and Surgical Journal, by J. P. Barbot, Apothecary. . . . .	822
ART. V.—J. Post-partum Vaginitis, with Occlusion of the Vagina. (Ex- tract of a Letter to the Editor.) 2. Imperforate Hymen. 3. Occlu- sion of the Vagina. 4. The same. 5. Same. . . . .	826
ART. VI.—On Infantile Thrush: By Dr. Lebarillier, Physician to the Foundling Hospital. (Continued from the Journal de Médecine de Bordeaux, for February, 1857: Translated for the New Orleans Medi- cal and Surgical Journal: By J. P. Barbot, Apothecary. . . . .	836

# Table of Contents.

887

	PAGE.
ART. VII.—1. Marriage between Relatives. 2. Deafness. 3. Spiritualism as a Cause of Insanity.....	842
ART. VIII.—Palæontology. Geology. Ethnology.....	849
ART. IX.—Amylenic Anaesthesia. Experiments in support of the Innocuity of Amylene, and its value as Anaesthetic Agent; By Dr. Debout, a Memoir presented to the Academy of Medicine at its sitting of March 12, 1857. Translated from L'Union Médicale of March 17, 1857, by M. Morton, Dowler, M. D., of New Orleans.....	872
Dr. Louis Bauer, of New York. Lecture.....	875

## REVIEW.

A Treatise on Therapeutics and Pharmacology or Materia Medica: By George B. Wood, M. D., late President of the American Medical Association, President of the College of Physicians of Philadelphia; Professor of the Theory and Practice of Medicine in the University of Pennsylvania; Senior Physician of the Pennsylvania Hospital; one of the authors of the United States Dispensatory; author of a Treatise on the Practice of Medicine, etc., etc. Two vols. 8vo. I. 840, II. 901. Philadelphia: J. B. Lippincott & Co. London: Trübner & Co. 1856.	876
---	-----

# INDEX TO VOL. XIII.

	PAGE.		PAGE.
ABSCCESS of the Liver.....	17	Cholera Infantum.....	684
Addison's Disease.....	352	Circumcision.....	392
Albumen.....	47	Climate of Texas.....	1
Ammonia Formulæ.....	48	Consumption.....	128
Amylenization.....	803, 872	Corneæ, Rupture of.....	197
Anatomy Pathol.....	175, 302, 484, 599	Comegys C. G., Trans. Hist. Med..	271
Aneurism.....	471, 472	“ on legal prot. of Med.	553
Ancient Nations.....	284	Convulsions.....	529
Animal Heat.....	493	Cowling J., on Consumptives.....	766
Animal Mineralization.....	50	Country Practice.....	769
Athon on Marriage of Relations.....	842-3	Crawcour I. L., on Chemistry.....	459
Atrasia Vaginæ.....	822	Croup.....	187
Atresia Ani.....	801	Crawford P. S., on Dysentery.....	681
BARRY, J. A., on Ophthalmia.....	593	Crania Brittannica.....	859
Barton, on the Pylorus.....	700	Curtis J., on Boston Census.....	274
Barnston J., on Nutrition.....	250	“ Hygiene of Boston.....	548
Barbot J. P., Transl. by.....	505, 532, 640	Curling T. B., on the Testis, Rev. of	579
“.....	661, 686, 692, 822, 836	DARET H., on Aneurism.....	471
Bauer L., Lecture.....	875	Davis J. B., on Crania.....	859
Bell C., on Imperforate Hymen.....	827	Delta of the Mississippi.....	718
Bernard C., on Glycogenia.....	179	Debout M., on Amylenization.....	872
“ on Heat Anim.....	493	Dislocation of the Femur.....	705
Bennet H., on the Uterus.....	218	Diabetes.....	380
Bell J., on Diabetes.....	380	Dirt Eating.....	299
Billingssea J. C., on Med. Literature	214	Diseases of South America.....	84
Bibber Van, on Cholera Infantum.....	684	Dowler B., on the Liver.....	22
Blood as Aliment.....	54	“ on Fever.....	149
“ as a Remedy.....	54	“ on Epilepsy.....	31
Blot H., on Glycosuria.....	505	“ on Refrigeration.....	149
Blake J., on Ophthalmia.....	676	“ on Vital Stat. of Negroes	164
Bones, Tumors of.....	79	“ on Dissections.....	282
Boston Statistics.....	274, 548	“ on Cemeteries.....	283
Bozeman N., on Fistula.....	259	“ on Path. Anat.....	175, 302
Brasher A. D., on the Liver.....	301	“ on Transcendental Med.	312
“ on Atresia Ani.....	801	“ Transl.....	47
Brink, on South America.....	84	“ Reviews by.....	91, 105, 133, 128
Brain, Extravasation in.....	417	“.....	424, 437, 566, 730, 876
Briquet M., on Hysteria.....	692	“ on Popular Medicine and	
Brown I. B., Review of.....	258	Signs of the Times.....	225
Bronzed Disease.....	352	“ on Path. Anat.....	484, 599, 620
Brown-Séguard, Sup. Ren. Caps.....	503	“ on Cholera.....	620
Bromine.....	820	“ on Gigantic Head.....	778
Bryant T., on Hernia.....	698	Dowler M. M., on Intermittent.....	30
CALVERT W. H., on Yellow Fever	8	“ on Hæmorrhage.....	145
Catlett G. C., on the Brain.....	192	“ on Public Health.....	293
Cartwright S. A., on Yel. Fev.....	649, 755	“ Reviews.....	575, 581, 733
Cæsarian Section.....	206, 707	“ Transl.....	35, 43, 48, 50, 53
Chambers, Review of, on Digestion	91	“.....	54, 56, 57, 179, 184, 186
Chauveau, on Glycogeny.....	232	“.....	187, 201, 230, 232, 234, 352
Chloroform.....	521, 541	“.....	367, 493, 503, 511, 513, 514
Cholera.....	43, 82, 620	“.....	520, 529, 664, 803, 818, 872
Chemistry, Path. & Ther.....	267, 459, 575	Draper J. W., Rev. of.....	424
Chavasse P. E., on Scarlatina.....	396	Dufour, on Yellow Fever.....	640
Chauffard E., on Typhus.....	661	Dunglison R., Remedies, Rev. of.....	437
		Dysentery.....	451, 681



	PAGE.		PAGE.
EGAN Y. B., on Comatose Phren.	800	Infantile Therapeutics	35
Electro-Chem. Therap.	228	Insanity	848
Ely A. W., on the National Hotel Poisoning	796	JOHNSTON A. K., on Med. Geog.	279
Escoubas, Rep. on Aneurism	472	KERSH W. D., on Man's Relations	776
Ethnology	849	Kirke W. S., on Apoplexy and Re- nal Dis.	406
Eve P. F., Ligature Brachio-Ceph.	248	Kin, Marriage in	186
Extra-Uterine Pregnancy	248	LAUZER M., on Iodine	514, 664
FAIRTHORNE R. F., on Iodine Reaction	200	Lane, on Stricture	704
Fenner E. D., on Yellow Fever and Quarantine	329	Lacy D., on Phren. and Physiol.	746
Fenner C. S., on Lithotrity	448	Labor, Blood-Letting in	773
Fever	671, 674	Leidy J., on Zeuglodon	858
“ Intermittent	30, 78	Lebarillier M., on Thrush	532, 686, 836
“ Yellow	8, 56, 71, 149, 329, 640, 649, 755	Leucothemia	57
“ Typhoid	9	Liver, Abscess of	17, 22, 301
“ Typhus	66, 77	Lithotrity	448
Freese J. R., on Surgery	12	Lungs, Diseases of	394
GARDNER, on Sterility	183	MacCORMAC, Rev. of on Consump- tion	128
Gammage W. L., on Monstrosity & Hæmorrhage	15	Mailhe, on Chemistry	367
“ on Dysentery	451	Manson, F. on Fever	674
“ on Country Practice	769	Macrocephalus	778
Germany, State Med. in	555	Marriage of Relatives	842
Geology	776, 849	Mammoth Teeth	854
Gibbes R. W., on Basilosaurus	857	Mastodon Giganteus	855
Gigantic Head	778	Maxon, on Typhus	77
Gilbert F. D., on the Lungs	394	Melanoisis Neligan on	80
Glycogenia 179, 232, 234, 350, 508,	511	Med. Jurisp	105, 555, 556
Glycosuria	505	Medical Education	214, 553, 564, 581
Gobrecht, on Append. Verm.	64	“ “ in Germany	555
Gratiolet, Exp. in Phys. Ren. Caps.	503	Medicine Transcendental	312
Gregory W., Rev. of his Chemistry	575	“ popularized	325
HÆMORRHAGE, Uterine	15	Meniere, M. on Deafness	843
“ from Tooth-socket	145	Mercier Armand, on Aneurism	472
“ Diathesis	401	Mercier, Alfred Report by	472
Harper J. D., on Scarlet Fever	741	Mineralization	50
Hamilton F. H., on Atresia Vagina	830	Miscellanea	136
Heard T. J., on Climate	1	Mills, C. S. on Cæsarian Section	206
Heise A. W., on Extra-Uter. Preg.	248	Military Surgery	285
Hewitt P., Blood in the Arachnoid	417	McKinney, J. W., on Corneæ	197
Hewitt G., on Whooping Cough	546	McLeod, on Chloroform	541
Hernia	698	Monstrosity	15
Hearn J. G., on the Pylorus	703	Moreton M., on idioform	520
Howard C. C., on Morphia	148	Mussey W. H., on Occlusion of the Vagina	830
Hospitals	235, 243	NEGROES	164
Holmes E. L., on Hospitals	243	Nit. Arg.	524
Holland Sir H., Notes, Rev.	730	Nicotine	524
Houston as a Residence	766	Nutrition	250
Huff, on Electro-Chem. Therap.	228	OPHTHALMIA	524, 593, 676
Hutchinson J., on Circumcision	392	Oré C., on Glycogeny	350, 511
Hygiene	293, 548, 555, 718, 723	Orfila on lig. œsophagus	513
Hysteria	692	Ozanam M., on Bromine	720
Hymen Imperforate	827	Ozone	201, 230
IODINE Potas.	78	PARRISH E., on Pharmacy	710
Iodine Tableau	514, 664	Palæontology	849
Iodoform	520	Pathological Anatomy	175, 218, 599, 484

	PAGE.		PAGE.
Passavant G., on Croup.....	187	Smith E., on Phthisis .....	194
Pallen M. A., on the Brain.....	189	Smith J. R., on Typhoid .....	9
Pendelton M., on Atresia Vagina..	831	Spiritualism .....	848
Petrifactions .....	856	Stricture, Pylorus.....	700, 703
Pepsin.....	57	“ Urethra .....	704
Perforation of the Append. Verm..	65	Sterility, Gardner on, Rev.....	133
Peritonitis, Wallace on .....	66	Sulpho-cyanuret of Potass.....	53
Peake H., on Cachex, Africana....	299	Surgery .....	12, 141
Peacock T. B., on Quinine .....	398	TAYLOR A. S., Rev. Med. Juris..	566
Phrenology .....	748	Testis.....	579
Phrenitis.....	800	Terebinthinate Poison.....	184
Phthisis .....	194	Thrush.....	532, 686, 836
Physiology, Draper's.....	424	Thompson J. E., on Mammoth Teeth	854
Pharmacy .....	710	Times, Signs of.....	355
Piper U., on Trees.....	723	Tourdes N. G., on Amylene.....	803
Poisoning—National Hotel.....	796	Trans. Am. Med. Assoc., Rev.....	581, 733
Popular Medicine.....	325	Trousseau, on Bronzed Disease....	352
Poison Terebinthinate.....	184	“ Therapeutics.....	818
“ antimonial .....	225	Transcendental Medicine.....	312, 325
Poole J., on Scarlatina.....	217	Trepanning.....	192
Practice of Medicine.....	443	Tracheotomy in Croup.....	187
Procter W., on Specific Gravity... 198		Trees .....	143, 723
“ test for Chloroform... 200		Tumors .....	79
Puberty in Negroes.....	142	Turney R., Trans. German, by....	524
Pylorus, Stricture of .....	700, 703	Typhus.....	77, 661
QUARANTINE .....	329, 398	UTERINE Pathology, .....	218, 248
Quinine.....	30	VIPERINE Inoculation.....	56
RENEL DISEASE .....	406	Vesico-vag. Fistula.....	259
Renouard P. V., Hist. Med.....	271	WARREN E., on Med. Education..	564
Richardson, B. W., on Antimony..	225	Wallace, on Peritonitis .....	66
Riley R., on Bleeding in tedious		Walser, Yel. Fever.....	76
Labor .....	773	Warren J. C., on the Mastodon...	855
Rozies M., on Occlusion of the Va-		Wharton & Stillé's Jurs., Rev. of..	105
gina .....	822	Whooping Cough.....	529, 546
Russell R., on Delta, Mississippi..	718	Williman, on Yellow Fever of Nor-	
SALIVA.....	53	folk.....	71
Salter H., on Hæmorrhage.....	401	Winslow, Review of.....	105
Scanzoni M., on Chloroform.....	521	Wilson, J. W., on extra-uterine	
Scarlatina.....	217, 396, 741	Preg .....	707
Semple, on Fever .....	671	Wounds .....	189, 192
Silliman, on Petrification and Zeug-		Wormald T., on Dislocation.....	705
lodon .....	856, 859	Wood G. B., Rev. of Therap.....	876
Signs of the Times.....	325	YELLOW Fever, 8, 56, 71, 149, 329	
Smith H. H., on Hospitals.....	235	640, 649, 755	
Smith J. E., on the Liver.....	17	ZEUGLODON Macrospondylus... 857	
“ “ on Practice.....	443		



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EDITED BY  
BENNET DOWLER, M. D.,

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I have this day transferred to Messrs. D. C. JENKINS, & CO., Proprietors of the Daily Delta, all my right, title and interest in the NEW ORLEANS MEDICAL AND SURGICAL JOURNAL, including the Books, with all Subscriptions, Accounts, &c., due said Journal. H. McCULLOCH. New Orleans, July 19, 1856.

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From the foregoing notice, our readers will perceive that the MEDICAL AND SURGICAL JOURNAL has become the property of the conductors of the Delta, while it remains under the efficient editorship of Dr. BENNET DOWLER, who has already established its character as one of the most valuable scientific periodicals of the present day.

The history of the Journal is one of gradual but steady and unvarying progress. Under the control of Doctor Hester, it displayed much ability and research; and at the death of that lamented gentleman, it had already assumed an enviable rank in the medical world; but its typographical execution, its general "making up," its *tout ensemble*, in a word, were not on a level with its great practical utility, and with the capacity of New Orleans for the support and permanent establishment of a Southern publishing trade. When Doctor DOWLER assumed the management, however, the printing of the Journal was given to the Job Office of the Delta; new materials were procured; a fine substantial paper was used; and, we believe, the subscribers had no reason to quarrel with its mechanical execution any more than its intellectual character.

We have recently re-organized our Job Office. We have procured the services of a foreman who is not only a favorite with his craft—a first requisite in such cases—but a thorough man of business, well known in the community and possessed of natural tact and taste which enable him, with the unlimited materials at his disposal, to turn out specimens of book-work which the Harpers or the Appletons might not be ashamed to own. The Journal, therefore, will appear henceforward in a handsomer shape than ever; no exertions will be spared to render the mechanical department as perfect as possible, and we have no doubt it will give complete satisfaction to its friends and supporters throughout the South-west.

Of the editorial department it is unnecessary to say a word. It will continue under the supervision of Dr. DOWLER. The same industry, the same cumulative and accumulative talent which has distinguished him in his arrangement and acquisition of facts; the same keen analytic power which is the fundamental characteristic of his writings, the same easy, idiomatic though emphatic style, may be expected to grace the future issues of the Journal as they have graced the past. He will be assisted by many of his usual contributors—men of high rank and standing in the Southern medical world. His brother, MORTON DOWLER, M.D., will continue his valuable essays, the quintessence of many modern scientific researches, drawn from France, from Germany, from every country where science has become wedded to literature—where discovery speaks in print.

By the way, the slight delay, it is only just to observe, which occurred in the publication of the Journal recently, was in no way attributable to any fault or shortcoming of the editor, for Dr. DOWLER, though suffering from severe indisposition, was as indefatigable in sickness as in health; it was caused by the preliminary difficulties in a change of proprietary and the deficiency of such paper as is requisite for the Journal. All these things are settled. The Journal will appear henceforward without any drawbracks, and we trust it will live and prosper as it deserves.